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ABSTRACT

The six papers which comprise this report analyze the labor market experience of youth as reflected in the 1982 results of a longitudinal study of a nationally representative sample of 32.9 million young people who were ages 14-21 as of January 1, 1979. Chapter 1, "The Nature and Consequences of High School Employment," by Ronald D'Amico and Paula Baker, reports that by the tenth grade about one third of students were employed for at least one week, with white males showing the highest percentage, and that the effects of employment on schooling appear to be positive. Chapter 2, "A Longitudinal Study of Reservation Wages, Duration of Job Search, and Subsequent Wages," by Choongsoo Kim, expands on previous studies concerned with whether the length of the job search period leads to subsequent wage gains. Chapter 3, "The Effectiveness of Job Search and Job Finding Methods of Young Americans," by John Wielgosz and Susan Carpenter, examines whether particular job search methods exert a significant influence on the duration of job search and level of job satisfaction. Chapter 4, "Race, Employment, and Educational Attainment," by Joan E. Crowley, argues that young people's desire for education is strong, and that their expectations are closely predictive of actual attainment. Chapter 5, "Long-Term Outcomes of Government-Subsidized Employment and Training Programs," also by Crowley, reports that such programs had little effect on subsequent employment either in terms of pay or of job satisfaction. Finally, Chapter 6, "The High School Dropout in an Overeducated Society," by William R. Morgan, discusses the finding that, by 1982, 4.8 million youth (14 percent of the 17-24 age youth cohort) had left high school and had no diploma or GED certification. (KH)

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PATHWAYS TO THE FUTURE, Vol. IV

A Report on the
National Longitudinal Surveys of Youth
Labor Market Experience in 1982

Revised: April 1984

Center for
Human Resource
Research

UD 024 403

The Ohio State University

PATHWAYS TO THE FUTURE, Vol. IV

A Report on the National Longitudinal Surveys of Youth Labor Market Experience in 1982

by

Paula Baker

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Revised: April 1984

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Table of Contents

1. The Nature and Consequences of High School Employment, by Ronald D'Amico and Paula Baker 1

    Introduction 1
    Work in High School: Preparatory Socialization or Distraction? 2
    Data and Methods 3
    The Extent of Work Among High School Youth 6
    The Consequences of High School Employment 20
    Summary and Conclusions 45
    References 49

2. A Longitudinal Study of Reservation Wages, Duration of Job Search, and Subsequent Wages: An Empirical Econometric Analysis, by Choongsoo Kim 51

    Basic Considerations: Theoretical and Statistical Issues 54
    Data and Variables 58
    Unemployment and Successful Job Search 60
    Duration of Job Search, Reservation Wages, and Subsequent Wages 66
    Summary of Findings and Conclusions 80
    Appendix 82
    References 87

3. The Effectiveness of Job Search and Job Finding Methods of Young Americans, by John Wielgosz and Susan Carpenter 90

    Introduction 90
    Effectiveness and Efficiency 94
    The Data 99
    Statistical Analysis 105
    Findings 108
    Conclusions 118
    Appendix 121
    References 125

4. Race, Employment and Educational Attainment, by Joan E. Crowley 127

    Introduction 127
    Measurement of Education 129
    Net Changes in Educational Expectations and Attainments, 1979-1982 130
    Models of Attainment 151
    Results 154
    Conclusions 175
    Appendix 177
    References 179

5. Long Term Outcomes of Government-Subsidized Employment and Training Programs, by Joan E. Crowley....181

Overview of government employment and training programs....181
Implementation Issues....183
Evaluation Strategy....185
Outcome Variables....187
Models of Program Effectiveness....188
Results....191
Summary and Conclusions....205
References....214

6. The High School Dropout in an Overeducated Society, by William R. Morgan....215

Introduction....215
The Prevalence and Permanence of Dropout Youth....218
Sex, Ethnic, and Regional Variations in Dropout Prevalence....228
The Social Reality of Undereducation....235
Early Labor Market Returns to High School Completion....243
Some Dropout Policy Options....263
Summary and Conclusions....266
Appendix....271
References....273

EXECUTIVE SUMMARY

PATHWAYS TO THE FUTURE, VOLUME IV

This is the fourth report on a nationally representative sample of the 32.9 million young people who were age 14-21 on January 1, 1979. This same sample will be interviewed yearly through 1984 as part of the National Longitudinal Surveys.

Chapter One, "The Nature and Consequences of High School Employment," finds that about one-third of high school students in the tenth grade were employed for at least one week, with white males showing the highest percentage. At the tenth grade level, minority students who are employed earn more than their white counterparts. Males in all grades earn more, work more hours, and have a higher likelihood of employment than females of the same age. Sex differences are much greater among minorities than among whites, however. By grade twelve, whites earn about five percent more than minorities and they work more hours per week and weeks per year. Three-quarters of all employed students had only one employer in a given year, with white males being most likely to have had more than one. One-third of all employed high school students were employed in a service occupation, far more than in any other type of occupation. Whites are much more likely to accumulate work experience over the course of their high school career than are minorities.

The effects of employment on schooling appear to be positive. Only for a high level of work intensity did employment rob students of study time, and this decrease did not appear to affect the students' academic performance. Employment actually seems to be positively related to the probability of high school graduation. Also, high school employment is significantly associated with less unemployment after high school. This connection may be due in part to an increased awareness of job opportunities as a result of high school employment. A significant number of students find employment after graduation in the same field, and even with the same employer as during school. Finally, work during high school is associated with higher paying and more prestigious jobs.

Chapter Two, "A Longitudinal Study of Reservation Wages, Duration of Job Search, and Subsequent Wages," expands on previous studies which focus on whether or not the length of the job search period among young people leads to positive returns in terms of subsequent wage gains. NLS data show that about 90 percent of males and nearly 80 percent of females who were unemployed in 1979 eventually found a job before the 1981 interview date. Males, on average, found jobs about 6 months after the interview date, and females found jobs after about 7 months. Individual characteristics among males between those who found a job and those who did not could not be readily differentiated, but among females, those who found a job, in contrast to those who did not, were more likely to have attained more years of schooling, to be more knowledgeable about the labor market, and to live in the South. Black females tended less than other females to be able to find jobs. Overall, unemployed young people, in contrast to their employed counterparts, tended to be less educated. Being a black or a veteran also increased the probability of being unemployed.

Among both males and females who did find jobs, the mean value of the subsequent wage was about 20 percent higher than that of the reservation wage as of the 1979 interview week. One surprising finding is that as their search period lengthens, unemployed youths increased their asking wages. For males, resulting wages were higher if they searched longer, and *vice versa*. Search activities thus yielded positive returns and could be regarded as an investment. For females, however, an inverse relationship was found between the length of job search and the resulting wage. (Supporting evidence for this negative relationship has been presented in many previous empirical studies.)

Chapter Three, "The Effectiveness of Job Search and Job Finding Methods of Young Americans," examines whether particular methods of job search exert a significant influence on the duration of job search and the level of job satisfaction of young Americans. It is well established that informal methods are very important in the job search process, but the reasons for this preference, however, are not at all clear. Previous studies of the effectiveness of job search methods have tended to use rather narrow definitions of effectiveness and have not adequately controlled for the variety of personal and labor market characteristics. The NLS data make it possible for this study to overcome many of these problems. Search methods do significantly influence the duration of job search, and informal methods perform significantly better than the state employment service. However, no evidence is found to support the often espoused view that informal methods convey a particular type of intensive and qualitative information which makes for greater job satisfaction.

Chapter Four, "Race, Employment and Educational Attainment," shows that young people's desire for education is strong, and data indicate that their expectations are closely predictive of actual attainment. A study of three groups defined by their 1979 educational status--youths who were enrolled in 11th or 12th grade, youth who were out of school, and youth who were in college--showed that in-school youth who expected degrees maintained that expectation, and among out-of-school youth, dropouts were most likely to increase their educational level. The group least likely to obtain additional education were the high school graduates. Among 1979 high school students, the model expectation is for a bachelor's degree, and the next largest category is high school graduation. Women are more likely than men to aspire to some college, especially white and Hispanic women. Hispanics are least likely to meet their educational goals, and whites, particularly white males, are most successful. Black females are less likely to have left school without completing their expected education than are black males. Most of the high school sample who were out of school by 1982 reported that they had left school because they had completed their degrees.

Among the 1979 college students, whites tended to be somewhat ahead of minorities in college, and the mean attainment for all sex-race groups fell around thirteen years. Black females had the lowest average attainment. In general, men in college tend more than women to expect to go on to graduate school, white women tend more often than men to expect to complete less than four years of college. Black and Hispanic men and black women have the highest rate of failure (to attain their expected level of education), while white males are less likely to be out of school and wanting more education. As in the case of high school students, white college students are more likely to report leaving school because they have completed their degrees. Minorities, particularly Hispanics, tend to leave, however, because of money problems or to find work.

Most out-of-school youth in 1979 were high school graduates who had not gone on to college, but large differences appear by race. Whites were most likely to be high school graduates; over half the out-of-school Hispanics are high school dropouts; the proportion of black dropouts falls between the proportions for whites and Hispanics. In general, women in each racial group tend less to drop out and more to attend college than their male counterparts. Most of the out-of-school sample failed to meet their educational goals. Failure rates for 1979 goals were highest for minority females and for black males. Getting a degree is the reason most whites give for leaving school, but for Hispanic men, leaving is more often attributed to going to work. Minority men are more likely to leave school to work than women.

Chapter Five, "Long-term Outcomes of Government-Subsidized Employment and Training Programs," finds that such programs had little effect on subsequent employment, either in terms of pay or of job satisfaction. Nor did programs seem to reduce the likelihood that a participant would be on welfare in 1981. The amount of welfare received may actually have been increased for some participants. For women, being in subsidized employment in 1980 and receiving job counseling in 1979 were both related to receiving higher amounts of welfare in 1981. Some participants may have been made more aware, through program participation, of the range of welfare support available and were thus able to increase their level of support.

Educational services appear to provide a means for program participants to reach at least a high school level. It appears that CETA helped provide this entry-level educational certification to youth who might otherwise not have done so.

Subsidized employment serves to help youth obtain a high school degree, at least for 1978 males and 1979 females. Education is linked with job satisfaction for young women and with not being on welfare for men who participated in 1978. For the women, the services reported as job counseling seem to be related to remaining in subsidized employment and in the welfare system. For both men and women, job counseling is negatively related to getting a diploma.

As might be expected, programs reported for the 1980 calendar year appear more likely than programs reported in earlier years to have a substantial (or at least statistically significant) relationship to 1981 outcomes. Results for longer time periods should be more affected than results for shorter periods by the diversity of events which affect individuals, making the effects of training harder to identify reliably.

Government training programs show no large effects, perhaps due to the variability of program quality inherent in a decentralized system. Through the basic education service, more participants receive high school diplomas or their equivalent than do comparable youth among the non-participants.

Chapter Six, "The High School Dropout in an Overeducated Society," finds that by 1982 4.8 million youth, representing 14 percent of the 17-24 age youth cohort, had left high school and had no diploma or GED certification. The dropout problem is particularly acute for the ethnic minorities. Among white youth, regional variation in dropout prevalence is substantial.

Sex differences in dropout prevalence are relatively slight. A high proportion of nonfinishers are black youth and a high proportion of early leavers are southern whites. The sex difference in dropout prevalence is due entirely to males' higher nonfinisher rate. Females' most frequently cited reasons for dropping out were family responsibility or pregnancy, dissatisfaction with school, and work-related problems. Males cited school dissatisfaction and work-related reasons. More striking are the differences in social origins between dropouts and youth who achieve higher levels of educational attainment. Fathers of dropout youth averaged only nine years of education, compared with 11 years for those of terminal high school graduates and 14 years for fathers of college graduates.

Estimation of 1982 wage and labor supply equations for all youth who in 1980 were either dropouts or terminal high school graduates shows the strong advantage of high school completion for all youth, regardless of sex or ethnic background. Completion via the GED, achieved by 6.1 percent of all high school graduates, brought only half the wage rate of return as did a regular diploma, however. By contrast, delayed completion in itself showed no disadvantage over on-time completion for males, although it did for females.

CHAPTER 1

THE NATURE AND CONSEQUENCES OF HIGH SCHOOL EMPLOYMENT

by
Ronald D'Amico*
and
Paula Baker

I. INTRODUCTION

Uncovering the factors that give rise to a smooth transition from school to work has been a high priority area for policy researchers for some time now. Nevertheless, identifying these factors, and indeed even recognizing successful labor market entrance, remains problematic. Certainly for many youth this transition is not a very satisfactory experience. A youth unemployment rate two to three times the national average as well as the often-observed substantially higher turnover rates of those under 25 years of age graphically underline that fact.

Among the factors which can improve the process of work establishment, work experience while still in school is often cited as being important. This study focuses on the effects of high school employment experience on job finding after leaving school and on the hourly wage and occupational status of post-school jobs held. An additional focus of the research will be to examine the extent to which work while in high school interferes with subsequent educational progress, including academic standing and the probabilities of dropping out of high school and attending college.

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*Thanks to members of a Center for Human Resources seminar for helpful comments. Special thanks to Dennis Grey for enormously helpful programming assistance and to Sherry Stoneman for excellent clerical help.

II. WORK IN HIGH SCHOOL: PREPARATORY SOCIALIZATION OR DISTRACTION?

The employment of high school students is extensive. Shapiro (1979) estimates that in 1979 62 percent of high school students were also in the labor force, and Johnston and Bachman (1973) arrive at figures nearly that large in their sample of eleventh and twelfth graders. Moreover, Lewis, et al. (1983) show that a substantial proportion of these students usually work more than twenty hours per week during the school year.

Reasons why this high school employment might ease the transition to adult work roles are straightforward. Employed students can acquire skills which are of direct value to employers; this investment in human capital could result in relatively higher post-schooling earnings. Students could also be enhancing their stock of information about the world of work and forging contacts with prospective employers which improve the effectiveness of their post-school job matching process.

Second, high school employment can be viewed as a form of preparatory socialization which eases the psychological and social trauma associated with a major and unsettling transition for many people. Thus, those who have had some employment experience prior to assuming the full responsibilities of adult work roles could have had the chance to acquire appropriate work habits and attitudes and in other ways become more gradually acclimated to the new expectations being placed upon them.

Finally, as Lewis, et al. (1983) point out, the money which youth earn by working throughout the school year is by no means insubstantial. These sums can make an important contribution to a family's economic well-being, and for some youth may make the difference in enabling them to further their education.

At the same time, the costs associated with acquiring high school work experiences should not be glossed over, as they have in recent discussions of these issues (e.g. Meyer and Wise, 1982a). Working while attending school may distract youth from their primary role obligation at this life cycle stage. The time constraints implied by combining school and work roles may mean that insufficient time can be devoted to studying, with consequent implications for grade achievements. These considerations assume heightened importance in the context of recently voiced concern over falling standards of academic excellence (National Commission, 1983). Similarly, extracurricular participation, which has been shown to have advantages for educational outcomes (e.g., Hanks and Eckland, 1976) and psychological adjustment (Otto and Featherman, 1975), may also be precluded. All these considerations suggest that employment during the school year may interfere with normal educational progress and that working students may thereby end up with less than their optimal educational credentials. Indeed, these cross-cutting effects of high school work experience suggest Greenberger's (1983) recent observation that working a few hours per week may instill desirable work habits and attitudes, but any greater work obligations may exact a costly toll from the students' scholastic lives. These considerations lead us to pay particular attention to possible nonlinear effects of high school work experience on educational and post-schooling employment outcomes.

III. DATA AND METHODS

Previous investigations of the effects of high school employment have been hampered by limitations of available measures of high school work experience. Johnston and Bachman (1973) find modest to small effects of total months worked from eighth grade to the end of high school on post-school hourly wage and unemployment status. Meyer and Wise (1982a; 1982b) find substantial effects of "usual hours" worked in high school on weeks worked after leaving school, and smaller effects on hourly wage. Neither study has the luxury of considering more refined measures of high school work intensity. Moreover, Meyer and Wise, relying on data from the High School Class of 1972, can consider only those who have attained at least twelve years of schooling. Thus they cannot consider the effects of high school employment on the probability of dropping out. That these effects may be substantial is suggested by their observation that high school employment appears to be inversely related to the probability of attending college.

This study aims to circumvent these difficulties by using more detailed measures of high school employment and also of educational and employment outcomes. Not only will hours and weeks worked be included in all equations as measures of work intensity, but the effects of the quality of those employment experiences will also be examined. One difficulty in examining these issues relates to the possibility that any observed high school employment effects may be spurious reflections of pre-existing attributes of individuals not gained through work, but leading both to high school employment and to the other observed outcomes. Meyer and Wise (1982a) suggest this interpretation in explaining their findings of strong and persistent high school employment effects on weeks worked after leaving school. In order to mitigate this possibility here we attempt to identify and hold constant these pre-existing attributes and predispositions as much as possible.

Data for this study are taken from the 1979 through 1982 waves of the National Longitudinal Surveys of Youth. All analyses in this paper are restricted to those enrolled in grades 10 through 12 at some time since January 1, 1978 but not enrolled in those grades by the time of the 1982 interview. The latter restriction is implemented to allow some post-high school outcomes to be observed for all respondents. Of the original sample size of over 12,000 cases, just under 6,000 meet these conditions.

The two key high school work intensity varibles used in this study are "percent of weeks worked more than 20 hours during the school year" and "percent of weeks worked 1 to 20 hours during the school year." Because prior research has found only limited variation in the extent of summer employment among high schoolers and no effects of this employment on post-schooling outcomes (Johnston and Bachman, 1973), summer employment is not considered here. Moreover, to avoid considering summer employment which begins in the several weeks before the school term ends or which lasts several weeks beyond the start of a new term, the school year is defined for purposes of this study as beginning on September fifteenth and ending on the May fifteenth of the subsequent year.[1]

The work intensity variables are calculated from the extensive work history information collected in each survey year. In particular, start and stop dates, periods of interruption of employment, and usual hours worked are available from January 1, 1978 to the date of the 1982 survey for all jobs held that are "...not odd jobs... (but are) jobs done on a more or less regular basis." The one exception to this is those respondents who are under 16 years old on any given survey date, for whom data are available only on survey week job and jobs which are a part of government or school sponsored training programs. Accordingly, the high school work experience variables of especially those in grade 10 must be deemed to be an underestimate of actual work experience.[2]

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[1] Prior to the 1980 interview date, enrollment status is gauged by a question asking whether the respondent is currently enrolled, and, for those answering 'no,' the date last enrolled. For these survey years, enrollment status is assumed to be continuous from 9/15 of the preceding year to the interview date (interviews are generally conducted in the first few months of each year) for those reporting they are currently enrolled, or to date last enrolled for those not currently enrolled but enrolled sometime since the start of the school year. Moreover, for the first group, unless the subsequent year's interview reports a date last enrolled prior to 5/15 of the previous year, enrollment status is further assumed continuous to 5/15. Subsequent to the 1980 interview date, a monthly school attendance variable is available for each respondent. The school year is still defined as beginning on 9/15 and ending on 5/15 of the subsequent year, but the monthly enrollment status variable enables month-long interruptions in school attendance to be registered for each respondent.

Because of known non-additivities in the determination of educational and labor force outcomes, all results in this chapter are presented separately by sex and minority status. Minority status has two categories, "white" and "minority," with the second category consisting of black and Hispanic respondents and the first category consisting of all others.[3]

IV. THE EXTENT OF WORK AMONG HIGH SCHOOL YOUTH

The available data permit a variety of ways of characterizing the work experience of high school youth. Several of these are portrayed in Tables 1.1 and 1.2. These tables present for females and males, respectively, information on the extent of high school work experience by year in school and minority status.

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[2] The work intensity variables are calculated using the usual hours worked, start and stop dates, and intervening periods when not at work for all jobs reported from January 1, 1978 to the 1982 survey. By coordinating enrollment status information with work experience data for each week, and by summing usual hours worked for those working at more than one job in a given week or weeks, the employment status and hours worked for each week during each 9/15 to 5/15 period from 1979 to 1982 can be calculated. Employment during this interval in a month the respondent reported he or she was not attending school, and/or employment during this period after his or her reported date last enrolled are excluded from both the numerator and denominator in creating the "percent weeks worked more than 20 hours per week during the school year" and "percent weeks worked 1 to 20 hours per week during the school year" variables.

[3] Hispanics are not included in the "whites" catgory because of their status as a minority group. Combining blacks and Hispanics into a single equation doubtless masks some important differences between these two groups, but small sample sizes in some equations preclude estimating equations separately for each of them. Moreover, preliminary results showed the two groups to be more like each other in the processes under examination here than either group is like "whites."

Grade 10 Employment

As Michael and Tuma (1983) have shown, work experience even among very young high school youth is extensive. Thirty-eight percent of white females and nearly one-half of white males are employed at least one week during their sophomore year in high school. But while a substantial number of these youth apparently have some exposure to the labor market, the intensity of their work involvement is clearly limited. The average white male youth in grade 10 worked no more than one-fifth the school year and fewer than five hours per week. In fact, by far the majority of respondents who worked averaged fewer than 10 hours per week.

The work intensity figures for white males are larger than the corresponding figures for females, but the differences are rather modest. Compared with the quite substantial 12 percentage point difference in grade 10 employment rates in favor of males, these modest sex differences in the mean work intensity measures are all the more surprising. Tables 1.3 and 1.4 shed further light on sex differences in work intensity by presenting additional descriptive statistics on work experiences for females and males, respectively, with the universe restricted to those who had some work experience while attending any of the grades. For those in grade 10, as expected, sex differences in work involvement show a further narrowing, although males still show slightly greater work involvement than females. Similarly, both sexes show very stable employment patterns, with about three-

Table 1.1 Extent of School Year Employment for Females, by Year in School and Minority Status

	Grade 10		Grade 11		Grade 12	
Variables	Minority	White	Minority	White	Minority	White
% who worked:						
At least one week	21.4	38.0	37.8	62.5	52.8	71.1
Half the school year or more	6.7	14.0	21.1	42.0	37.3	53.8
Usual hours worked per week	1.6	2.9	4.0	7.9	8.2	12.4
% whose usual hours worked is:						
1 to 10 hours/week	16.1	27.7	23.6	27.7	19.3	21.7
Greater than 10 to 20 hours/week	3.9	7.9	8.8	23.1	18.9	22.9
More than 20 hours/week	1.4	2.3	5.4	11.7	14.7	26.4
Didn't work	78.6	62.0	62.2	37.5	47.1	28.9
% of weeks in school year worked:						
More than 20 hours/week	3.1	4.1	7.1	13.7	16.6	25.8
1 to 20 hours/week	5.8	13.8	14.4	28.5	19.7	26.8
Total % weeks worked	8.9	17.9	21.5	42.2	36.3	52.7
N	360	429	611	707	866	1100

UNIVERSE: Students enrolled for at least fifteen weeks in the grade labelled at the top of the columns. However, nearly all students enrolled for at least fifteen weeks were also enrolled for the entirety of the school year.

Table 1.2 Extent of School Year Employment for Males, by Year in School and Minority Status

Variables	Grade 10		Grade 11		Grade 12	
	Minority	White	Minority	White	Minority	White
% who worked:						
At least one week	35.5	49.6	52.8	70.8	62.0	75.0
Half the school year or more	12.7	16.1	28.8	48.9	41.1	57.2
Usual hours worked per week	3.7	4.3	6.9	10.6	11.4	14.9
% whose usual hours worked is:						
1 to 10 hours/week	22.2	35.0	24.6	28.1	19.5	19.1
Greater than 10 to 20 hours/week	7.8	10.0	17.1	22.1	18.3	21.1
More than 20 hours/week	5.5	4.6	11.1	20.7	24.3	34.7
Didn't work	65.5	50.4	47.2	29.2	38.0	25.0
% of weeks in school year worked:						
More than 20 hours/week	6.8	7.8	12.6	22.1	24.0	32.9
1 to 20 hours/week	9.9	13.8	18.6	26.0	18.5	23.2
Total % weeks worked	16.7	21.6	31.2	48.1	42.6	56.1
N	361	452	566	730	771	1098

UNIVERSE: Students enrolled for at least fifteen weeks in the grade labelled at the top of the columns. However, nearly all students enrolled for at least fifteen weeks were also enrolled for the entirety of the school year.

quarters of respondents accruing all their grade 10 work experience with a single employer. What is striking, however, is the substantial sex difference in mean hourly wage, with males averaging about 50¢ an hour more than females.[4] What the figures for whites seem to show, then, is a surprisingly substantial (for respondents so young) employment rate, especially among males, but with those who work showing on average quite limited amounts of work commitment.

Within each sex, differences in grade 10 employment across minority group status are if anything even more striking. As previously mentioned, nearly one-half of white males worked at least one week during the school year, but only 35 percent of minority males were so employed; thirty-eight percent of white females worked while in school, but the corresponding figure for minority females is only 21.4 percent. Interestingly, however, among males who worked at least one week, the inter-race differences do not show a consistent pattern of greater work commitment in favor of whites. In fact, among males who worked at least one week while in grade 10, blacks and Hispanics worked nearly 2 hours per week more on average than whites and they were over six percentage points more likely to be working an average of more than twenty hours per week during the school year. By contrast, among females, whites, who have the higher rate of employment, also demonstrate a higher degree of work intensity, although the latter difference is quite small. By implication, the very modest sex differences in work intensity observed among whites loom much larger among minority group members. Not only are black and Hispanic males much more likely than females to have worked at some time during the school year, but those who worked are substantially more likely to have usually worked 20 hours a week or more and they work on average three hours longer per week.

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[4] All hourly wage figures throughout this chapter are reported in 1982 dollars. The CPI index was used in adjusting figures.

Given the relative intensity of the work commitment among minority group males who work, it is tempting to infer that the race differences in employment rates might be due to the particular difficulties minority group members have in finding employment Indeed, the unemployment rates of minority teenagers are known to be substantially larger than the corresponding figures for whites (Santos, 1979). If discrimination or related factors do play such a role, there is no evidence of its operation once employment is secured. Although small sample sizes make these figures suspect, Tables 1.3 and 1.4 show that the hourly wages of male and female minority group members substantially exceed those of their white counterparts. Minority females earn 37¢ more than white females and minority males earn 16¢ more per hour than any other group.

Grades 11 and 12 Employment.

As one moves across the columns of Tables 1.1 through 1.4 to consider the employment experiences of youth in grades 11 and 12, one immediately sees a sharp and steady increase in all measures of labor force experience and work intensity for all four race/sex groups. For example, whereas 38 percent of white females worked at least one week in grade 10, 62.5 percent did so in grade 11 and 71.1 percent did so in grade 12; whereas 14 percent worked half the school year or more in grade 10, 42 percent did so in grade 11 and 53.8 percent did so in grade 12; the average white female worked 2.9 hours per week in grade 10, but over 12 hours per week by grade 12. Similarly, among those who worked at least one week, Table 1.3 shows that 6.1 percent of white females worked an average of more than 20 hours per week in grade 10, but by

Table 1.3 Nature of School Year Employment for Females Who Worked, by Year in School and Minority Status

	Grade 10		Grade 11		Grade 12	
Variables	Minority	White	Minority	White	Minority	White
Usual hours worked per week	7.4	7.7	10.6	12.6	15.6	17.4
% whose usual hours worked is:						
1 to 10 hours/week	75.2	72.9	62.4	44.3	36.6	30.5
Greater than 10 to 20 hours/week	18.2	20.9	23.2	37.0	36.8	32.2
More than 20 hours/week	6.5	6.1	14.3	18.7	27.8	37.2
% of weeks in school year worked:						
More than 20 hours/week	14.5	10.8	18.8	21.9	31.4	36.3
1 to 20 hours/week	27.1	36.3	38.1	45.6	37.2	37.7
Total % weeks worked	41.6	47.1	56.9	67.5	68.6	74.1
Average hourly wage[1]	2.50	2.13	2.81	2.55	2.91	3.07
Number of employers (%):						
1	84.5	76.8	82.5	68.1	76.1	69.6
2	13.8	16.8	15.0	25.6	19.2	22.5
3 or more	1.7	6.4	2.6	6.3	4.7	8.0
N	77	163	231	442	458	782

UNIVERSE: For the first two columns of figures restricted to those enrolled for at least 15 weeks in grade 10 who worked at least one week while attending this grade: for the third and fourth columns, to those enrolled at least 15 weeks in grade 11 who worked at least one week while attending this grade: and for the final two columns, to those enrolled for at least 15 weeks in grade 12 who worked at least one week while attending this grade.

[1] All hourly wage figures are reported in 1982 dollars.

Table 1.4 Nature of School Year Employment for Males Who Worked, by Year in School and Minority Status

	Grade 10		Grade 11		Grade 12	
Variables	Minority	White	Minority	White	Minority	White
Usual hours worked per week	10.5	8.7	13.0	15.0	18.3	19.9
% whose usual hours worked is:						
1 to 10 hours/week	62.5	70.6	46.6	39.7	31.4	25.5
Greater than 10 to 20 hours/week	22.0	20.2	32.4	31.2	29.4	28.1
More than 20 hours/week	15.5	9.3	21.0	29.2	39.2	46.3
% of weeks in school year worked:						
More than 20 hours/week	19.2	15.8	23.9	31.2	38.7	43.9
1 to 20 hours/week	27.9	27.8	35.2	36.7	29.8	31.0
Total, % weeks worked	47.1	43.6	59.1	67.9	68.6	74.9
Average hourly wage[1]	2.88	2.72	2.86	2.93	3.12	3.27
Number of employers (%):						
1	70.9	71.9	74.0	67.9	76.5	69.2
2	20.9	22.2	21.6	25.3	18.9	24.4
3 or more	8.2	6.0	4.4	6.8	4.6	6.4
N	128	224	299	517	478	823

UNIVERSE: For the first two columns of figures restricted to those enrolled for at least 15 weeks in grade 10 who worked at least one week while attending this grade: for the third and fourth columns, to those enrolled at least 15 weeks in grade 11 who worked at least one week while attending this grade: and for the final two columns, to those enrolled for at least 15 weeks in grade 12 who worked at least one week while attending this grade.

[1] All hourly wage figures are reported in 1982 dollars.

grade 12 37.2 percent did so. Equally striking patterns appear for each of the other race/sex groups. By grade 12 we observe that about two-thirds to three-quarters of all groups except minority females work sometime during the school year, with nearly 40 percent of all four groups working more than half the weeks of their senior year in high school. Moreover, those who work show astonishingly high levels of work intensity; nearly one-half of white males who worked in grade 12 did so an average of more than 20 hours per week throughout the school year. Despite this increased work intensity, however, the predominance of attachment to only one employer continues. About 70 percent of all race/sex groups work for just one employer in each school year.

Given that all race/sex groups show roughly parallel increases in labor force participation and work intensity over the three school years, we might expect the race and sex differences in work experience we observed in grade 10 to apply with equal force in grades 11 and 12. In general this is true. Males of both races show higher levels of labor force participation and work intensity than females, and whites show higher levels than minorities. But some notable differences emerge by grade 12. Minority males have lost their edge in work intensity to white males, and more strikingly minority members of both sexes have lost their advantage in average hourly wage. By grade 12, white males earn $3.27 an hour, followed by minority males at $3.12, white females at $3.07 and lastly minority females at $2.91. Whatever advantage minority group members had in grade 10 has obviously and decisively disappeared by grade 12. In any case, as judged by these hourly wage figures, the sorts of jobs young people have are obviously not lucrative; even white males are earning on average less than the 1982 minimum wage of $3.35 an hour for covered employment.

A further look at the kinds of jobs youth hold in high school is given in Table 1.5, which presents Census 1-digit occupation and industry distributions for the grade 12 survey week job for each race/sex group.[5] Predictably, the bulk of employment for females occurs in clerical, service and to a lesser extent sales occupations, with slightly more minority than white women in clerical occupations. Service work constitutes the largest single category of employment for males, with laborers and operatives also accounting for sizable portions of male youth employment. Doubtless, the fact that one-third of youth employment in all race/sex categories is in service occupations reflects the heavy reliance of fast food and similar establishments on young workers. But beyond this, the familiar sex segregation into occupational roles has already begun to appear in even these very early labor force episodes. Somewhat surprising at first glance is the substantially higher average Duncan SEI score for female workers, with minority females actually leading all other groups. Their status likely derives from the preponderance of women in white collar occupations at an age where males have not yet established their footholds in professional and managerial occupations.

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[5] While the NLS collects complete hours and weeks worked information for each year for all youth sixteen years of age and older, occupation, industry and hourly wage data are available only for: (a) the survey week job, and (b) all other jobs held which lasted for 9 weeks or more and whose usual hours worked per week was at least 20 hours. In order to avoid unduly biasing job characteristics data by disproportionately counting jobs of longer and steadier duration, all occupation, industry and hourly wage data for school year jobs used throughout this chapter refer to survey week jobs only. For those who worked at more than one job during the school year, job characteristics of survey week job only are used; for those who worked sometime during the school year but were not employed at the time of the survey, occupation, industry and hourly wage data are considered NA; for those few respondents interviewed after May 15 in a given year, occupation, industry and hourly wage data are similarly considered NA. The implication of the decision not to use non-survey week job data where available, however, means that sample sizes are somewhat smaller than they might otherwise be.

Table 1.5 Grade 12 Occupation and Industry Distribution for Those Who Worked, by Sex and Minority Status

Variable	Female		Male	
	Minority	White	Minority	White
Occupation (%):				
Professional, technical and kindred	1.0	1.7	2.4	2.6
Managers and administrators, exc. farm	0.7	0.8	1.0	1.5
Sales	11.0	11.3	5.4	7.3
Clerical	44.9	36.1	9.1	6.7
Crafts	0.7	1.0	8.4	9.7
Operatives	3.8	3.5	14.2	13.5
Laborers, exc. farm	2.7	2.5	19.9	21.0
Farm managers and laborers	-	0.8	3.0	6.2
Service workers	34.2	36.7	36.5	31.3
Private household	1.0	5.6	-	.2
Average Duncan SEI score	33.9	31.2	21.2	21.3
Industry (%):				
Agriculture, forestry, fisheries	-	1.4	4.1	7.3
Construction	0.3	0.6	5.7	4.3
Manufacturing	5.2	5.8	9.1	10.3
Wholesale and retail trade	45.7	54.6	44.6	54.4
Services, exc. professional	7.1	12.2	12.9	11.6
Professional services	31.3	17.7	16.9	7.1
Public administration	5.5	1.9	2.4	1.9
Other (inc. mining, utilities, and finance)	4.8	5.9	4.3	3.0
N	291	515	296	533

UNIVERSE: Students attending grade 12 for at least 15 weeks, who reported a survey week job and who were interviewed during the school year.

The reliance of youth upon fast food establishments for work experience is again apparent in the industry distributions. Wholesale and retail trade accounts for roughly 50 percent of the employment of youth in all race/sex categories, though for whites somewhat more than for minorities. Other industries accounting for a sizable share of youth employment are service industries and, to a lesser extent, manufacturing.

Employment over the School Years.

Looking at youth employment cross-sectionally, as we have to this point, does not enable us to examine the patterns of youth employment across school years. Table 1.6 sheds an interesting light on this matter by reporting frequencies of the patterns of youth employment and nonemployment in each of grades 10, 11 and 12. A '1' in any of the three leftmost columns indicates employment for at least one week during that school year; a '0' indicates no employment in that year. Thus, the percentages identified by the row heading '111' indicates the percent of youth employed in each of their tenth, eleventh and twelfth years in school; the row headed '000' indicates the percent employed in none of those years. The predominant patterns of youth employment become quite clear in this display. Among whites, only 15 percent of males and 18 percent of females have been employed in none of these three high school years. By contrast, 38.5 percent and 28.2 percent, respectively, have been employed during some portion of all three years. As earlier tables have shown, about 70 percent of whites of both sexes are employed in their senior year. The striking pattern for whites of both sexes is for grade 10 employment to be associated with employment in both grade 11 and grade 12, and for employment in grade 11 to be overwhelmingly associated with employment in grade 12. That is, discontinuous employment histories are by far the

Table 1.6 Patterns of High School Employment, by Sex and Minority Status (%)

Worked in grade*			Female		Male	
10	11	12	Minority	White	Minority	White
0	0	0	37.5	18.1	26.8	15.0
1	0	0	2.9	3.1	2.4	3.0
0	1	0	8.7	4.9	5.4	6.3
1	1	0	2.5	4.2	2.4	4.3
1	0	1	3.3	2.4	2.0	1.7
0	0	1	18.8	15.0	16.6	9.0
0	1	1	14.6	24.0	20.5	22.3
1	1	1	11.7	28.2	23.9	38.5
N			240	287	205	301

*A '1' under a column indicates employment at least one week while in that grade in school. A '0' indicates no employment in that grade.

NOTE: Respondents in this table attended and were interviewed in each of their sophomore, junior and senior years of school.

exception. In all these characteristics, white males and females are certainly more alike than different.

However, differences across minority group status within each of the sexes are pronounced. In particular, minority group members are much more likely to have been employed in none of the school years (26.8 percent of males and 37.5 percent of females) and much less likely to have been employed in all three years (23. 9 percent of males and 11.7 percent of females). They also display patterns of discontinuous employment somewhat more frequently, possibly reflecting a greater inability to find employment when it is desired. And, as earlier tables have shown, sex differences among minority groups are far more pronounced than they are among whites. Relative to minority males, minority females are half again as likely to accrue no employment experience during high school and half as likely to have been employed in all three years.

In summary, these descriptive data on the high school work experience of youth reveal the following patterns: (1) Even as of grade 10 a surprisingly large proportion of high schoolers report some work experience during the school year, ranging from just over one-third of minority females to nearly 50 percent of white males. Those who work, however, report only very modest levels of work intensity. (2) By grade 12 all groups report drastically higher levels of labor force participation and work intensity. Three quarters of white males work at least one week during the school year and nearly 60 percent work half of the school year or more. Among all race/sex groups those who work average between 15 and 20 hours per week throughout the school year. (3) Males report consistently higher employment rates and levels of work intensity than females, and whites report higher levels than do minority group members. Sex differences are more pronounced among minorities than among whites. (4) The minority group advantage in grade 10 hourly wage has been completely reversed by grade 12, with whites earning an average of 15¢ more per hour. (5) All race/sex groups across all years in school report very stable employment experiences, with three-quarters working for only one employer in any given year. (6) The distribution of youth workers in grade 12 across industry and occupation categories shows that trade establishments predominate in employing high school youth. Females are heavily represented in service, clerical and sales occupations, and males in service, laborer and operative categories. (7) Among whites over four-fifths of both males and females have accumulated some labor force experience while in high school. A substantial number have been employed in all three years. Compared to whites, nearly twice as many blacks and Hispanics have accumulated no work experience and half as many have been employed continuously throughout these three years of school.

V. THE CONSEQUENCES OF HIGH SCHOOL EMPLOYMENT

The previous section has revealed that the labor market experiences of youth are both extensive and intensive. The next four sections will attempt to gauge the consequences of this employment for four sets of outcomes. The first section will examine consequences for high school experiences, including class rank and study time. The second will examine the extent to which high school employment is associated with educational advancement, namely dropping out of high school or attending college. The third section examines the issue of whether high school employment eases the transition to post-school employment by decreasing the incidence of unemployment. Finally the quality of post-school employment experiences will be assessed by estimating hourly wage and Duncan SEI equations measured both at the first survey after leaving school and the third survey out. As in previous tables, all results are displayed separately by sex and minority status. In all these equations the primary measures of high school work experience used are 'percent of weeks during the school year worked more than 20 hours per week' and 'percent of weeks worked 1-20 hours per week.' While any of a number of other measures of the intensity of high school work involvement could have been used, these were decided upon because: a) they combine both the extensivity and intensivity dimensions of work experience by using information about both number of weeks worked during the school year and number of hours worked per week, and b) they explicitly allow nonlinearities in the effects of work intensity, by allowing work of less than 20 hours per week to have different effects than more intensive work involvement.

Control variables used in various of these equations include educational expectations (or a variable measuring whether the respondent dropped out of high school, for the non-college goer post-school work experience equations); measures of background characteristics (specifically, whether the respondent lived with both parents at age 14 and the education of the household head); marital status; number of children; and, for minority group equations, 'Hispanic,' a dummy variable coded '1' if the respondent was Hispanic, and '0' if black. For purposes of easy reference, variable labels are presented with variable descriptions, as well as with means for each race/sex group, in Table 1.7. Fuller detail on the measurement of dependent variables will be presented as the regression results are described.

The multivariate methods used in the following sections enable us to identify the relationship between high school employment and the outcome variables net of the possibly confounding role of the control variables. But the analyses still cannot permit us to unambiguously identify the causal

Table 1.7 Variable Descriptions and Means for Variables Used in Regression Analyses, by Sex and Minority Status

		Means			
		Female		Male	
Variable	Variable Description	Minority	White	Minority	White
Key independent variables					
% of weeks worked more than 20 hours/week	Percent of weeks during the high school year R worked more than 20 hours/week	08	.13	.13	.21
% of weeks worked 1-20 hours/week	Percent of weeks during the high school year R worked 1-20 hours/week	.13	.27	.18	.25
Dependent variables					
Rank	R's class rank/class size	.56	.42	.60	.54
Study time	Hours R spent studying, survey week 1981	9.08	8.62	8.81	7.32
Free time at h.s.	Hours R spent at school not studying or attending classes, survey week 1981	4.19	3.78	4.26	5.63
Knowledge of work	R's knowledge of 9 occupation tasks (0 to 9), 1979	4.76	5.94	4.87	6.09
College	Did R attend college? (1=yes; 0=no)	.48	.44	.37	.46
Dropout	Did R drop out of high school? (1=yes; 0=no)	.23	.21	.32	.24
% weeks unemployed in first year out	Weeks unemployed in 52 weeks after leaving high school/weeks in the labor force	.44	.27	.33	.22
Unemployment before first job	Weeks unemployed since leaving high school before R found a job	9.29	4.91	6.63	4.34
Wage, first year out	Hourly wage at first survey after leaving high school, in cents (1982 dollars)	373.6	368.6	436.2	493.5
Wage, third year out	Hourly wage at third survey after leaving high school, in cents (1982 dollars)	446.7	420.2	572.4	591.5
Duncan, first year out	Duncan score of occupation in first survey after leaving high school	32.8	32.6	20.0	21.0
Duncan, third year out	Duncan score of occupation in third survey after leaving high school	33.0	35.2	24.0	23.2
Control variables					
Educational expectations	R's educational expectations, 1979	13.9	13.9	13.7	13.8
Both parents present	R lived with (step) father and (step) mother at age 14 (1=yes; 0=no)	.64	.83	.64	.84
Head's education	Father's education (or mother's education if NA)	9.6	11.6	9.6	12.0

Table 1.7 (Cont.)

Variable	Variable Description	Means			
		Female		Male	
		Minority	White	Minority	White
Control variables cont.					
Marital status	Marital status in year outcome is measured	.11	.14	.06	.07
# of children	Number of children in year outcome is measured	.19	.04	.10	.04
Hispanic	0=black; 1=Hispanic (minority equations)	.41	-	.38	-
N of cases		611	748	597	774

NOTE: Sample sizes and means of all independent variables except marital status and # of children are from the DROPOUT equation using listwise deletion. Means for marital status and # of children are from the 'wage, first year out' equation. Universes, resultant sample sizes, and the year in which independent variables are measured vary with each outcome variable equation and are defined as the multivariate results are presented.

impact of high school employment since unobserved characteristics of those who worked may in fact account for observed differences on outcome variables. For example, if one observes a significant negative coefficient associated with high school employment in the weeks of unemployment equation one could argue either that working while in high school imparts job search skills and information about the labor market which reduces unemployment or that the higher motivations of some students cause them both to work while in high school and to engage in more diligent job search upon leaving school which reduces subsequent unemployment. In the following sections, interpretation of coefficients associated with the high school employment variables will be couched in causal terms, but the existence of unobserved heterogeneity as an alternate explanation for the findings should be borne in mind.

Effects on High School Experiences

Among the most obvious and feared effects of youth employment that might be expected is that work involvement might detract from the amount of time students spend on their homework and might consequently lower the student's academic standing. Given the extent of youth employment, as shown in the preceding section, these effects could be substantial. Similarly, the time spent in employment might restrict the student's participation in extracurricular activities or other free time at school spent interacting with peers. Previous work suggests this may be unfortunate, since extracurricular participation has been shown to promote educational ambition and scholastic achievement (Hanks and Eckland, 1976) and retard delinquency (Landers and Landers, 1978; D'Amico, 1983). On the positive side, however, youth employment may provide the worker with first hand experience in the labor market which should enhance his or her pool of quality information about the world of work and available job opportunities. This information is potentially very valuable in the post-schooling job matching process.

These hypotheses are examined by observing the effects of the work intensity measures, net of appropriate controls, on the following four outcome variables: (1) the respondent's relative class rank, (2) hours spent studying, (3) free time spent at school, and (4) the nine-item knowledge of the world of work scale. The first of these is taken from the transcript survey of NLS respondents, and is measured as of the last year enrolled in high school as the respondent's class rank divided by the class size. Low numbers thus indicate a high class rank and high numbers indicate a standing near the bottom of the class. The second and third items are taken from the time-use survey included in the 1981 questionnaire. As part of the time-use sequence, youth currently enrolled in high school were asked the number of hours they spent studying within the past seven days. Free time at school was estimated as the remainder of the total time in hours each respondent spent at school in the last seven days minus the time spent during this interval attending classes, studying or attending lectures or labs; it is taken to be an indicator of the degree of participation in extracurricular or other leisure time activities at school. Both of these measures have been shown to have adequate reliability and validity as indicators of usual time expenditures at these activities (Baker, et al., 1983). Finally, knowledge of the world of work was administered in 1979 as a nine item scale querying youth on their knowledge of the job tasks of nine different occupational specialities. The '% weeks worked' independent variables are measured for the school year in which the outcomes variables are measured. Since earlier tables have shown that high school work intensity increases as youth progress through school, a variable measuring the respondent's grade in school at the time the outcomes were measured is included in all equations as a control. However, for the 'rank,' 'study time' and 'free time' equations, nearly all youth were in the twelfth grade.

Results of the analyses are reported in Table 1.8 for white and minority females and in Table 1.9 for males. In general these results do not show grave cause for alarm. Percent of weeks worked 20 or more hours does modestly reduce the amount of time white males spend studying and does limit free time spent at school for both minority females and white males. But these effects are all rather small and do not emerge at all for either white females or minority males. Moreover, work commitment at 1 to 20 hours per week has no such adverse effects for any race/sex group, and even boosts the knowledge of the world of work for females of both race groups. Finally, whatever constraints high school employment poses for studying, no adverse effects of any sort or for any race/sex group appear for either work intensity measure in the class rank equations. In short, the picture presented by these results is that very intensive work involvement may pose some modest time constraints for some race/sex groups but that these do not retard academic standing. Less intensive work involvement shows no adverse consequences of any sort.

Effects on Educational Completion

While high school employment has no apparent negative effects on class rank, it may nonetheless deter youth from their initial educational ambitions. Early forays into the labor market may cause youth to prematurely lose their enthusiasm for schooling or allure them with the prospect of financial independence into abandoning any further educational investments. This section examines these issues by analyzing the effect of the two high school employment measures on the probability of dropping out of high school

Table 1.8 Regression Analysis of Effects of High School Work Experience on Adolescent Experiences for Females, by Minority Status

Independent variables	Minority				Whites			
	Rank	Study time	Free time at h.s.	Knowledge of work	Rank	Study time	Free time at h.s.	Knowledge of work
% weeks worked more than 20 hours/week	-.065 (-.067)	-2.505 (-.085)	-3.299* (-.140)	.510 (.060)	.037 (.042)	-2.281 (-.086)	-1.299 (-.070)	.073 (.010)
% weeks worked 1-20 hours/week	-.073 (-.085)	.801 (.029)	-.312 (-.014)	.696** (.100)	-.055 (-.070)	-2.264 (-.098)	-1.517 (-.094)	.455** (.077)
Educational expectations	-.055** (-.407)	.450 (.107)	.092 (.027)	.141** (.162)	-.050** (-.361)	.332 (.082)	-.183 (-.065)	.219** (.244)
Both parents present	-.093* (-.158)	.620 (.033)	.657 (.044)	.086 (.022)	.004 (.005)	1.305 (.058)	.129 (.008)	-.191 (-.038)
Head's education	-.012* (-.166)	.170 (.073)	.040 (.021)	.100** (.206)	-.000 (-.004)	.074 (.027)	-.032 (-.017)	.047** (.082)
Grade in school	.003 (.006)	2.241* (.136)	.638 (.049)	.263** (.137)	-.059* (-.107)	.892 (.060)	1.610* (.152)	.493** (.259)
Hispanic	.002 (.004)	-.224 (-.012)	.724 (.050)	.388** (.099)	-	-	-	-
Constant	1.51	-25.29	-5.09	-1.33	1.83	-7.26	-11.63	-2.91
R^2	.273	.052	.025	.139	.156	.030	.028	.198
N	215	277	239	853	347	323	285	1055

NOTE: See Table 1.7 for brief variable descriptions and the text for fuller details. Numbers are metric coefficients with standardized values in parentheses. The '% weeks worked' variables are measured for the school year in which the outcomes are measured.

*Significant at the .05 level.
**Significant at the .01 level.

Table 1.9 Regression Analysis of Effects of High School Work Experience on Adolescent Experiences for Males, by Minority Status

Independent variables	Dependent variables							
	Minority				Whites			
	Rank	Study time	Free time at h.s.	Knowledge of work	Rank	Study time	Free time at h.s.	Knowledge of work
% weeks worked more than 20 hours/ week	-.032 (-.036)	-2.970 (-.103)	-2.951 (-.133)	-.151 (-.021)	-.042 (-.053)	-3.069* (-.132)	-4.492** (-.194)	-.200 (-.032)
% weeks worked 1-20 hours/week	-.092 (-.094)	-1.386 (-.052)	-1.436 (-.069)	.129 (.018)	-.081 (-.095)	-1.026 (-.044)	-1.908 (-.082)	.003 (.000)
Educational expectations	-.059** (-.436)	.217 (.052)	.129 (.040)	.242** (.277)	-.059** (-.441)	.788** (.220)	-.225 (-.063)	.175** (.202)
Both parents present	.004 (.007)	1.079 (.058)	1.428 (.098)	-.167 (-.042)	-.017 (-.020)	1.448 (.068)	-.693 (-.033)	.108 (.021)
Head's education	.001 (.016)	.012 (.006)	-.044 (-.026)	.044** (.089)	.001 (.000)	-.012 (-.005)	.324* (.132)	.050** (.089)
Grade in school	-.006 (-.011)	.832 (.065)	1.006 (.100)	.205** (.113)	-.012 (-.021)	.375 (.031)	.267 (.020)	.479** (.258)
Hispanic	-.052 (-.087)	-.949 (-.052)	-1.464 (-.103)	.570** (.145)	-	-	-	-
Constant	1.54	-3.42	-8.32	-1.19	1.57	-8.06	3.96	-2.10
R^2	.219	.026	.050	.139	.208	.068	.046	.162
N	199	259	219	837	281	350	316	1105

NOTE: See Table 1.7 for brief variable descriptions and the text for fuller details. Numbers are metric coefficients with standardized values in parentheses. The '% weeks worked' variables are measured for the school year in which the outcomes are measured.

*Significant at the .05 level
**Significant at the .01 level.

and on the probability of attending college. One difficulty with studies of these issues in the past has been the suspicion that the range of control variables used has not effectively controlled for pre-existing educational inclinations. Researchers have consequently been obliged to hedge whenever negative effects of high school employment on subsequent educational progressions have been observed. To mitigate the possibility of spurious effects being observed in this paper, educational expectations, measured in the first survey year, is included in these equations. Only respondents still enrolled in high school at the time the educational expectations item was asked are included in these analyses. The effects of high school work intensity can therefore be interpreted as consequences for subsequent educational progress net of initial educational expectations.

For the dropout equations, the '% weeks worked' variables were measured for most respondents as of grade 11. For those who had missing data on grade 11 employment, employment while in grade 10 was used. As before, a variable measuring from which of the two years the high school work experience is measured is included in all equations. For the college attendance equations, employment while in grade 11 is used for everyone.[6] Since both 'dropout' and 'college attendance' are dichotomous variables, probit analysis was employed.

Table 1.10 reports on these analyses. The results show some conflicting patterns but in general do not suggest that high school employment is an important impediment to educational progression. Indeed, working at modest intensity levels actually appears to foster greater educational perseverance.

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[6] Work intensity was measured as of grade 11 rather than grade 12 to minimize problems of reciprocal causation. For example, seniors who had definitely decided against college or who had been rejected from the colleges of their choice might increase their work intensity in preparation for post-schooling employment.

Table 1.10 Probit Analysis of Effects of High School Work Experience on Educational Attainment, by Sex and Minority Status

Independent variables	Females				Males			
	Minority		White		Minority		White	
	Dropout	College	Dropout	College	Dropout	College	Dropout	College
% weeks worked more than 20 hours/week	-.112	.067	.379	-.502*	.012	-.164	.047	-.349*
% weeks worked 1-20 hours/week	-.606*	.492*	-.481*	.160	-.155	-.052	-.414*	.151
Educational expectations	-.237*	.264*	-.224*	.370*	-.179*	.313*	-.249*	.345*
Both parents present	-.402*	.010	-.417*	.052	-.145	.077	-.426*	.288
Head's education	-.020	.030	-.033	.087*	-.017	.050*	-.038	.092*
Number of children in first survey after high school	.571*	-.633*	1.295*	-1.462*	.375*	-.694*	.046	-1.596*
Age in 1982	-	-.081	-	.137	-	-.035	-	.007
Grade when work experience is measured	-1.504*	-	-1.623*	-	-1.414*	-	-1.625*	-
Hispanic	.373*	-.086	-	-	.115	.185	-	-
Constant	3.94*	-2.37	4.13*	-9.023*	3.35*	-4.61*	4.87*	-6.42*
N	611	545	748	668	597	515	774	690

NOTE: See Table 1.7 for brief variable descriptions and the text for fuller details. Numbers are maximum likelihood estimates.

*Indicates coefficient is at least 1.98 times its standard error.

Specifically, females of both race groups and white males who work from 1-20 hours per week during the school year are less likely to drop out of high school. Working at higher levels of work intensity has no significant effects on the probability of dropping out for any race/sex group. Perhaps the positive effects of high school employment emerge because employed youth have the financial resources to subsidize their educational expenses, or because employment fosters habits of diligence and perseverance, or because employment at what are usually low-paying jobs attunes youth to the need for educational credentials. In any case, concern that employment may impede high school progress appears to be wholly unfounded for each of the four race/sex groups examined here.

Things are more complicated when the probability of college attendance is examined. For both white males and white females grade 11 employment at the higher work intensity levels does significantly decrease the probability of college attendance. Possibly, whites who find remunerative employment while in high school are tempted to defer their college plans at least temporarily to pursue full-time employment. If this is the case, policy implications of these results are not straightforward. Given recent evidence of declining returns to college education (Freeman, 1975), interrupting college plans to take advantage of an attractive employment opportunity may well represent a careful and rational choice. In any event, the effects observed here for both groups are modest in size and in fact just reach the threshold for statistical significance. Moreover, no negative effects of employment at the lower intensity level appear for any race/sex group, and minority females actually appear to be spurred to college attendance the more weeks they worked at 1-20 hours/week.

Effects on the Transition to Employment

Among the advantages of high school employment that could be hypothesized is that such work would ease the transition to post-school employment, at least for those who do not go on to college. By providing advance information about job opportunities, fostering the formation of valuable personal contacts, or actually providing a job opportunity upon school-leaving, high school employment can smooth the turbulence of the post-school job matching process. Moreover, such work experience may increase one's attractiveness to employers by signaling that the job applicant may be industrious, ambitious or already have useful job skills. Two measures of the smoothness of the school-to-work transition examined here are the proportion of weeks unemployed to total time in the labor force for the 52 week interval after school leaving, and total number of weeks unemployed from date last enrolled to the time the respondent's first job began. Both of these variables should provide some indication of the ease with which the erstwhile students handled the difficult immediate post-schooling period. Analyses of both variables are restricted to those sample members who had not attended college, since effects of high school work intensity should be pronounced for this group.[7] Both the high school work intensity variables were measured for the respondent's last year in high school. Also in these equations, whether the respondent dropped out or completed high school replaces educational expectations as a control. This variable also effectively serves to control whether the work intensity variables were measured as of the senior year or earlier.

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[7] To avoid needlessly excluding respondents who may have attended college only very briefly, the universe is actually restricted to those who had not completed grade 13 and who had not attended grade 13 in the academic year leading up to the 1982 survey. Wherever in this chapter the universe is defined as non-college youth, this slightly broader universe restriction is implied.

Table 1.11 reports on these analyses for each of the four race/sex groups. As hypothesized, high school work experience proves to be resoundingly useful in minimizing unemployment. For all race/sex groups both work intensity measures have significant and strong effects in reducing both the proportion of weeks unemployed in the 52 weeks after leaving school and the total weeks unemployed before finding employment. Moreover, comparing standardized coefficients in each case shows that working more than 20 hours per week in school is somewhat more effective in reducing unemployment than is working 1-20 hours per week. Unequivocably high school work experience substantially reduces the turbulence associated with getting established in the labor market.

Part of its effect may well be that high school jobs become post-school starting jobs or at least provide information about related job opportunities. If so, we would observe many respondents working for the same employer or at least working in the same job family in their pre- and post-school leaving employments. Table 1.12 examines these possibilities. The column labelled 'same employer' reports the percent of non-college youth who worked in high school whose employer in their first survey week job after leaving school was the same as an employer for whom they worked at some point during their final school year. The last two columns record the extent to which youths' survey week jobs in their last year in high school are in the same 1-digit occupation or industry categories as their first survey week job after leaving school. Although job mobility data aggregated at so high a level obscures much, the results shown here are suggestive. Results show that between one-fifth and one-quarter of non-college youth who worked during their last year in high school work for their same employer upon leaving school; about 50 percent work in the same 1-digit industry and 40 percent of whites

Table 1.11 Regression Analysis of Effects of High School Work Experience on the Transition to Work of Non-College Youth, by Sex and Minority Status

	Females				Males			
	Minority		White		Minority		White	
	% wks. unem-ployed in first year out	Unemploy-ment before first job	% wks. unem-ployed in first year out	Unemploy-ment before first job	% wks. unem-ployed in first year out	Unemploy-ment before first job	% wks. unem-ployed in first year out	Unemploy-ment before first job
% weeks worked more 20 hrs/wk	-.384** (-.290)	-12.42** (-.230)	-.223** (-.251)	-6.458** (-.199)	-.282** (-.289)	-7.575** (-.190)	-.196** (-.247)	-6.342** (-.214)
% weeks worked 1-20 hrs/wk	-.240** (-.166)	-10.52** (-.184)	-.189** (-.183)	-5.952** (-.165)	-.154** (-.130)	-5.839** (-.121)	-.102** (-.099)	-4.947** (-.135)
Dropout	.159** (.173)	2.192 (.052)	.143** (.182)	1.911 (.064)	.185** (.260)	6.033** (.203)	.172** (.263)	4.333** (.172)
Both parents present	-.039 (-.044)	.177 (.005)	-.071* (-.081)	-1.253 (-.040)	.059* (.081)	1.319 (.044)	-.057 (-.070)	1.917 (.062)
Head's education	-.002 (-.022)	-.106 (-.022)	-.008 (-.066)	-.297* (-.070)	.006 (.064)	-.017 (-.004)	-.006 (-.055)	-.169 (-.044)
Marital status	.045 (.040)	.754 (.015)	.040 (.050)	.162 (.005)	-.094 (-.056)	.705 (.010)	-.037 (-.026)	.540 (.011)
Number of children	.020 (.026)	.344 (.009)	.063 (.073)	1.344 (.041)	-.003 (-.003)	-1.334 (-.033)	-.056 (-.036)	4.60 (.008)
Hispanic	-.233** (-.271)	-7.824** (-.216)	-	-	-.089** (-.122)	-3.262** (-.110)	-	-
Constant	.619	17.09	454	11.65	.290	7.945	.352	6.24
R^2	.227	.131	.180	.078	.194	.105	.190	.104
N	424	478	617	761	503	608	655	823

NOTE: See Table 1.7 for brief variable descriptions. Numbers are metric coefficients with standardized values in parentheses. The '% weeks worked' variables are measured for the respondent's last year in high school.

*Significant at the .05 level.
**Significant at the .01 level.

Table 1.12 Percent Who did Not Attend College and Who Worked in High School Whose First Survey Week Job After High School is with the Same Employer, or in the Same One-Digit Occupation or Industry as Their Last School Year Job, by Sex and Minority Status

Universe	N	Same Employer	Same 1-digit Occupation	Same 1-digit Industry
Minority females	264	20.1	60.3	55.0
White females	459	23.5	50.9	45.4
Minority males	408	27.5	41.1	49.2
White males	518	28.2	39.6	51.2

UNIVERSE: Those who did not complete grade 13 and who were not enrolled in grade 13 during the academic year leading up to the 1982 survey.

and over half of the minority group work in the same 1-digit occupation. These findings can be looked at in two ways. On the one hand a substantial number of youth, possibly as many as half, by all appearances find employment upon leaving school with the same employer or in occupations or industries in the same job family as their high school employment. For many of these young workers, then, high school jobs serve as steppingstones for employment subsequent to leaving school. This seems especially true for minority females who may recognize few alternate post-schooling employment options. Cast in this light the low subsequent unemployment experienced by high school workers seems very understandable.

At the same time roughly as many young workers find post-schooling employment not in the same broad 1-digit occupational or industry category as their most recent previous employment experience. For these youth it seems doubtful that their school year employment provided any relevant job skills other than perhaps instilling very general desirable work habits, such as diligence or responsibility.

Effects on Subsequent Labor Market Success

Though school year employment apparently does reduce unemployment associated with the school to work transition, it remains to be seen how enduring these effects are. In this section the effects of school year work experience on the quality of jobs held one survey year and three survey years after leaving school are examined. The measures of post-school job quality used are Duncan SEI score of occupation held and hourly wage adjusted to 1982 dollars (see footnote 4).[8] School-year employment is measured for the respondent's last year in high school; once again the universe is restricted to non-college youth only.

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[8] The Duncan Socioeconomic Index is a widely used measure of occupational attainment and is computed as a weighted combination of the educational

Results of these analyses are presented in Tables 1.13 and 1.14 for females and males, respectively. Examining equations with outcome variables measured one survey after school leaving, note that positive and significant effects of high school work experience on Duncan SEI appear for all race/sex groups except minority males. However, only for white males are these effects as strong regardless of the level of intensity of the school year employment; for white and minority females, only work at greater than 20 hours per week seems to matter. High school employment at the higher intensity level is also significant in the "hourly wage, first year out" equations, though only for the two female race groups. Apparently, intensive work involvement while in high school does generally lead to more favorable employment opportunities in the immediate post-school period.

The effects on Duncan SEI score are, however, short-lived. Three survey years after leaving school all effects of school year employment on Duncan score have disappeared for all race/sex groups. At the same time, for minority group males and females and for white males, high school employment at the higher intensity level has important and strong effects on third year hourly wage. This finding is particularly intriguing for minority males, since for this group no effects whatever appeared on the first survey job after leaving school. In any case, these results are consistent with the recent observation of Becker and Hills (1983) that teenage labor market experience is especially beneficial for the longer-term labor market success particularly of black workers. It appears, then, that high school work

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attainment and earnings of incumbents of Census 3-digit occupations (Duncan, 1961). Its correlation with the prestige score of the 45 occupations for which both measures are available exceeds .90.

Table 1.13 Regression Analysis of Effects of High School Work Experience on Post-School Employment Success of Non-College Females, by Minority Status

	Dependent variables							
	Minority				White			
	Duncan first year	Wage first year	Duncan third year	Wage third year	Duncan first year	Wage first year	Duncan third year	Wage third year
% weeks worked more than 20 hours/week	6.084* (.129)	79.20** (.237)	5.988 (.116)	113.5* (.209)	5.391* (.111)	81.71** (.216)	-.827 (-.019)	23.57 (.073)
% weeks worked 1-20 hours/week	5.564 (.095)	27.44 (.068)	.033 (.001)	-4.515 (-.007)	4.184 (.076)	30.27 (.070)	.493 (.009)	26.96 (.065)
Dropout	-9.031** (-.191)	6.435 (.019)	-14.12** (-.263)	-96.45 (-.171)	-6.632** (-.124)	-47.78* (-.111)	-5.573 (-.102)	-45.63 (-.114)
Both parents present	-.494 (-.013)	-10.99 (-.040)	1.368 (.034)	-25.66 (-.061)	5.487* (.099)	27.93 (.064)	8.711** (.186)	25.53 (.074)
Head's education	.258 (.055)	.837 (.025)	.527 (.109)	7.614 (.148)	.478 (.070)	3.517 (.066)	.241 (.041)	5.514 (.125)
Marital status	-1.278 (-.022)	-34.53 (-.083)	-1.948 (.049)	-15.09 (-.036)	-.317 (-.006)	2.022 (.005)	4.094 (.112)	22.30 (.083)
Number of children	-2.926 (-.073)	-13.73 (-.047)	-5.234* (-.199)	8.531 (.034)	-3.483 (-.042)	-72.46* (-.100)	-2.694 (-.070)	-51.64** (-.182)
Weeks since date last enrolled	.113 (.074)	.124 (.011)	-.002 (-.004)	.184 (.030)	-.026 (-.016)	1.997** (.155)	-.061 (-.104)	-.034 (-.008)
Hispanic	7.974** (.218)	39.28* (.152)	8.619* (.232)	124.4** (.315)	-	-	-	-
Constant	22.37	328.7	26.60	307.6	20.04	205.85	33.31	340.5
R^2	.112	.084	.164	.140	.063	.104	.084	.096
N	236	232	125	123	482	465	239	234

NOTE: Numbers are metric coefficients with standardized values in parentheses. See Table 1.7 for brief variable descriptions. The '% weeks worked' variables are measured for the respondent's last year in high school.

*Significant at the .05 level.
**Significant at the .01 level.

Table 1.14 Regression Analysis of Effects of High School Work Experience on Post-School Employment Success of Non-College Males, by Minority Status

	Dependent variables							
	Minority				White			
	Duncan first year	Wage first year	Duncan third year	Wage third year	Duncan first year	Wage first year	Duncan third year	Wage third year
% weeks worked more than 20 hours/week	3.730 (.107)	25.91 (.051)	-.206 (-.005)	196.87* (.194)	4.248** (.126)	20.71 (.031)	-.054 (-.002)	104.64* (.142)
% weeks worked 1-20 hours/week	-1.078 (-.025)	8.323 (.014)	-.421 (-.008)	-47.39 (-.038)	5.636** (.129)	-9.521 (-.011)	-.328 (-.007)	37.90 (.039)
Dropout	-3.350* (-.122)	-53.03* (-.131)	1.403 (.039)	32.90 (.035)	-3.244* (-.108)	-89.63** (-.150)	-4.860* (-.135)	-27.56 (-.036)
Both parents present	.498 (.018)	53.25* (.133)	3.527 (.105)	103.97 (.121)	1.128 (.031)	-.143 (-.000)	-.456 (-.010)	101.80 (.113)
Head's education	-.012 (-.004)	4.369 (.085)	.187 (.045)	-6.777 (-.065)	.252 (.054)	-.816 (-.009)	.386 (.080)	11.98* (.116)
Marital status	-2.864 (-.049)	64.87 (.079)	.638 (.014)	-39.96 (-.036)	1.036 (.020)	90.02 (.088)	2.287 (.068)	58.14 (.085)
Number of children	-1.416 (-.037)	104.99** (.184)	.995 (.042)	30.88 (.052)	-2.093 (-.033)	221.17** (.175)	-1.180 (-.040)	25.72 (.043)
Weeks since date last enrolled	.019 (.018)	1.476 (.097)	-.021 (-.037)	1.129 (.083)	.027 (.023)	.203 (.009)	-.060 (-.107)	1.590* (.140)
Hispanic	1.365 (.051)	55.59** (.143)	2.971 (.095)	35.92 (.046)	-	-	-	-
Constant	19.07	275.27	20.66	334.0	14.56	497.54	28.15	98.85
R^2	.035	.116	.029	.078	.052	.073	.050	.085
N	363	380	160	155	537	533	275	270

NOTE: Numbers are metric coefficients with standardized values in parentheses. See Table 1.7 for brief variable descriptions. The '% weeks worked' variables are measured for the respondent's last year in high school.

*Significant at the .05 level.
**Significant at the .01 level.

experience may help the immediate post-school occupational placement but that these effects lose relevance as youth accumulate additional labor market experience by which they may be judged. For hourly wages, however, the effects of school year employment at least at more than 20 hours per week are more enduring.

A further look at the mechanisms by which school employment impacts on post-school labor market success is presented in Table 1.15 for females and Table 1.16 for males, which show effects on the Duncan score and hourly wage of post-school jobs held of the Duncan score and hourly wage of school year jobs, respectively. The universe is further restricted here to those non-college youth who had some work experience in their last year of high school, since the question is whether high school work intensity or the character of school year jobs matters most for subsequent labor market success. The small sample sizes resulting from these universe restrictions and the possibility of biased coefficients resulting from the lagged dependent variables means these results should be considered exploratory only. Nonetheless, these findings are suggestive. Results show that the two work intensity variables have no effects on either of the first year out outcomes for any of the four cohorts. By contrast, the Duncan score and/or hourly wage of school year jobs have effects on year one employment success for all race/sex groups. This pattern suggests that perhaps not work intensity per se but the quality or character of high school jobs held matters most for immediate post-schooling labor market success. Put another way, school year employment does not impart general work habits that are subsequently rewarded by employers. If this were the case, the intensity of school year employment might be expected to matter more for the quality of immediate post-school jobs held than would the specific characteristics of the school year jobs. Rather, it appears that in

Table 1.15 Regression Analysis of Effects of Characteristics of High School Jobs on Post-School Work Experience of Non-College Females with Some High School Work Experience, by Minority Status

	Dependent variables							
	Minority				White			
	Duncan first year	Wage first year	Duncan third year	Wage third year	Duncan first year	Wage first year	Duncan third year	Wage third year
% weeks worked more than 20 hours/week	-1.718 (-.040)	23.93 (.073)	39.80** (.848)	255.06* (.645)	-2.780 (-.058)	42.77 (.134)	-14.73 (-.326)	22.53 (.064)
% weeks worked 1-20 hours/week	.173 (.004)	51.84 (.149)	29.04* (.594)	138.00 (.335)	-.048 (-.001)	-.471 (-.001)	-6.195 (-.122)	56.44 (.140)
Dropout	-10.17 (-.203)	-6.099 (-.014)	-43.91* (-.553)	-109.36 (-.164)	-4.994 (-.081)	-49.01 (-.121)	-4.185 (-.073)	50.88 (.119)
Both parents present	.211 (.006)	-43.97 (-.147)	4.055 (.103)	55.40 (.161)	3.696 (.067)	40.35 (.111)	13.11* (.311)	42.76 (.135)
Head's education	-.331 (-.071)	-6.473 (-.177)	-.200 (-.034)	8.948 (.176)	.082 (.012)	-.302 (-.006)	-.240 (-.044)	12.87 (.259)
Marital status	-2.702 (-.052)	-23.51 (-.059)	11.93 (.294)	11.54 (.034)	3.881 (.067)	-4.657 (-.012)	6.932 (.191)	-13.41 (-.047)
Number of children	.622 (.015)	-36.12 (-.112)	1.503 (.052)	14.76 (.060)	5.299 (.061)	-42.77 (-.071)	2.952 (.067)	-123.48* (-.360)
Weeks since date last enrolled	.062 (.046)	-.060 (-.006)	.077 (.143)	.552 (.115)	.022 (.014)	2.546** (.255)	-.065 (-.113)	.786 (.181)
Hispanic	2.671 (.077)	24.02 (.088)	10.55 (.288)	201.87** (.639)	-	-	-	-
Duncan, last job in school	.375** (.378)	-	.127 (.120)	-	.456** (.437)	-	-.005 (-.005)	-
Wage, last job in school	-	.419** (.443)	-	-.071 (-.071)	-	.096 (.105)	-	.281 (.244)

Table 1.15 (continued)

	Dependent variables							
	Minority				White			
	Duncan first year	Wage first year	Duncan third year	Wage third year	Duncan first year	Wage first year	Duncan third year	Wage third year
Constant	26.00	316.93	-12.91	27.31	16.41	216.02	42.30	63.62
R^2	.241	.196	.377	.480	.209	.129	.169	.257
N	92	89	36	34	231	214	68	61

NOTE: Numbers are metric coefficients with standardized values in parentheses. See Table 1.7 for brief variable descriptions. The '% weeks worked' variables are measured as of the respondent's last year in high school.

*Significant at the .05 level.
**Significant at the .01 level.

Table 1.16 Regression Analysis of Effects of Characteristics of High School Jobs on Post-School Work Experience of Non-College Males with Some High School Work Experience, by Minority Status

	Dependent variables							
	Minority				White			
	Duncan first year	Wage first year	Duncan third year	Wage third year	Duncan first year	Wage first year	Duncan third year	Wage third year
% weeks worked more than 20 hours/week	.808 (.022)	-40.67 (-.074)	-9.360 (-.214)	256.76 (.160)	5.289 (.135)	52.52 (.076)	-4.080 (-.100)	-125.20 (-.135)
% weeks worked 1-20 hours/week	-3.739 (-.091)	-12.80 (-.022)	-3.909 (-.081)	16.81 (.009)	7.269 (.170)	51.34 (.068)	-1.664 (-.035)	-187.73 (-.167)
Dropout	-3.836 (-.125)	-44.64 (-.097	7.850 (.231)	342.93 (.269)	1.151 (.032)	-66.71 (-.101)	-1.064 (-.028)	-25.15 (-.027)
Both parents present	4.502 (.143)	66.98 (.148)	11.13 (.237)	648.56 (.369)	.806 (.019)	28.46 (.039)	-5.867 (-.107)	182.84 (.120)
Head's education	.045 (.013)	4.687 (.088)	-.096 (-.024)	-3.752 (-.026)	.282 (.052)	-4.416 (-.048)	.879 (.158)	23.78 (.163)
Marital status	-1.975 (-.039)	49.71 (.069)	-.205 (-.005)	-91.73 (-.066)	1.848 (.033)	240.13** (.244)	5.967 (.177)	186.65 (.247)
Number of children	-2.850 (-.071)	85.98 (.146)	3.414 (.107)	-102.34 (-.089)	-2.210 (-.028)	75.46 (.052)	-6.112 (-.211)	-42.63 (-.068)
Weeks since date last enrolled	.138 (.121)	.813 (.048)	-.006 (-.010)	-.973 (-.047)	.024 (.019)	-1.290 (-.056)	.014 (.026)	1.066 (.092)
Hispanic	-1.106 (-.038)	32.06 (.075)	-1.248 (-.039)	-250.41 (-.211)	-	-	-	-
Duncan, last job in school	.252** (.235)	-	.602* (.367)	-	.453** (.382)	-	.164 (.124)	-
Wage, last job in school	-	.342** (.242)	-	1.087 (.269)	-	.427** (.300)	-	.368 (.209)

Table 1.16 (continued)

	Dependent variables							
	Minority				White			
	Duncan first year	Wage first year	Duncan third year	Wage third year	Duncan first year	Wage first year	Duncan third year	Wage third year
Constant	10.00	227.10	9.96	-203.37	4.04	361.15	15.85	-24.19
R^2	.126	.151	.253	.227	.181	.196	.100	.147
N	139	143	44	39	248	241	90	77

NOTE: Numbers are metric coefficients with standardized values in parentheses. See Table 1.7 for brief variable descriptions. The '% weeks worked' variables are measured as of the respondent's last year in high school.

*Significant at the .05 level.
**Significant at the .01 level.

the short-run school year employment helps youth forge job contacts or acquire work skills or habits that are valuable in direct proportion to the quality of school year jobs held.

Matters are less clearcut when year three outcomes are examined. Due to extremely small sample sizes for these outcomes, inferences from these results are very hazardous. Nonetheless, the very consistent pattern of effects of Duncan SEI and hourly wage of school jobs on year one outcomes breaks down completely when year three outcomes are examined. This suggests that the quality of school year jobs held matters little over the longer term, as youth put the school-to-work transition behind them and become more firmly established in the labor market. Given the simultaneous lack of consistent effects of either of the work intensity variables, one is tempted to conclude that the modest effects on year three outcomes uncovered when the whole sample was examined (Tables 1.13 and 1.14) were primarily driven by the advantages of having had some high school work experience relative to having had none at all.

VI. SUMMARY AND CONCLUSIONS

The first section of this paper documented the rather extensive work involvement of high school youth. The second section then attempted to evaluate the consequences of this employment for subsequent educational and labor market outcomes.

Educational Outcomes

Results showed generally only neutral or benign effects of high school employment on educational outcomes. Such work did cut into the study time of white males and the leisure time at school of white males and minority females. But these effects appeared only for the higher level of work intensity and were generally fairly modest in size. Moreover, whatever social integration occurs from leisure time school involvement can perhaps occur for employed students at their work setting. In any event, neither decreased study time nor the diffused involvement and motivation of employed students has any deleterious consequences for academic standing; neither work intensity measure has any significant effect on relative class rank for any race/sex group. Nor does work in high school retard the high school educational progress of any race/sex group, net of initial educational expectations and other appropriate controls. Indeed, high school employment is actually associated with increased probability of completing high school for all four groups. Whites who work at the higher intensity level while in high school do seem less likely to attend college, but the implications of this finding from a policy standpoint are not clearcut.

Labor Market Outcomes: Effects for Non-College Goers

There can be no doubt of the striking effects of high school employment in easing the school-to-work transition. The more weeks worked while in the last year of high school, and the more hours worked per week, the fewer weeks of unemployment experienced in the first year after leaving school, and the fewer weeks of unemployment experienced before finding a post-high school job. The coefficients representing these effects are large and significant for all race/sex groups. Part of the reason for this reduced unemployment may be that youth acquire valuable work skills or become aware of job opportunities in their high school employment stints. This is suggested by the considerable number of working students who find post-school jobs with the same employer or in the same 1-digit occupation or industry category as their school year job.

Working students also generally appear to find more remunerative and/or higher prestige jobs upon completing school. Specifically, work intensity is associated with higher Duncan SEI scores for white males and higher Duncan scores and higher hourly wage rates for minority and white females in the first survey after leaving school. Moreover, these effects are in evidence even several years after leaving school; in the third survey after leaving school, work involvement is associated with higher wges for minority groups of both sexes as well as for white males.

Restricting the analysis to working students permits a closer look at the way these effects are exerted. Specifically, when Duncan score and hourly wage of high school jobs are included as regressors in equations for, respectively, Duncan score and hourly wage of the job held in the first survey after leaving school, effects of the work intensity measures lose significance. This finding suggests that at least in the short run the quality of high school jobs, rather than work intensity per se, matters most for immediate post-school labor market success.

Implications

Whenever so many outcomes are examined in a single chapter, the treatment of any single issue must necessarily be cursory. This means that complications in analysis and complexities of the processes examined, which presented themselves throughout this paper, were inevitably given short schift. This paper aimed at breadth rather than depth of presentation. The objective was to present an overview and raise a series of issues which, despite their importance, have heretofore been rather neglected in the literature. As such, our conclusions should of necessity be general rather than specific.

Taken as a whole, then, the results of these analyses suggest the very valuable role that high school employment can play. While this paper has not attempted to isolate the mechanisms by which high school employment exerts its impact, working while in high school seems nonetheless to carry a substantial advantage in improving the school-to-work transition. Of equal importance, it does so virtually without interfering in either academic achievement or educational progress.

These results suggest that the practical experiences students gain in work settings may be of substantial value. Policies aimed at improving the post-school labor market experiences of disadvantaged youth might reflect this fact. Cooperative vocational education or work-study programs may make a substantial contribution, for example. Similarly, vocational counselors might spend greater efforts at placing or counseling students in their choice of school year work activities. These efforts are not advocated as substitutes for improving the academic standards especially of minority American education. Rather, improved scholastic credentials jointly with well placed and timely work experience can be valuable aids in improving the post-school experiences of American youth.

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CHAPTER 2

A LONGITUDINAL STUDY OF RESERVATION WAGES, DURATION OF JOB SEARCH, AND SUBSEQUENT WAGES: AN EMPIRICAL ECONOMETRIC ANALYSIS

by Choongsoo Kim*

A longstanding concern of labor economics has been to determine why some individuals have higher probabilities of unemployment than others. The importance of understanding the causes and consequences of unemployment is widely acknowledged, but the discussions usually arise from one of two different points of view. One point of view focuses on the consequences of unemployment: unemployment time incurs indirect costs, such as loss of on-the-job or occupational training opportunities, as well as direct costs in terms of earnings losses. The other position holds that unemployment reflects a rational individual's decision-making process and is an activity that is necessary to improve the job matching process, given the fact that the individual has incomplete information. This view is useful in explaining a high labor market turnover pattern among individuals who have less labor market experience.

Basically, two different facets of unemployment have been analyzed--its incidence and its length. Although we attempt to explain both facets in this analysis, we pay particular attention to the relationship between the length of the job search period and post-unemployment wages.

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Past studies of unemployment duration, whose theoretical foundations were generally formulated within the framework of job search theory, can be broadly classified into two categories. One category includes studies that investigate the interrelationships among reservation wage, unemployment duration, and reemployment probability (for example, Sant, 1977; Kahn, 1978; Kiefer and Neumann, 1979b and 1981; Lancaster, 1979; and Lancaster and Nickel, 1980. The key concerns of these studies are how reservation wages are formed conditional upon the known distribution of the wage offer function, and whether or not reservation wages decline as the search period increases.[1] Studies in the other category focus on the effect of unemployment insurance (or government support in general) on the length of the search period and the relationship between the length of the search period and subsequent wage gains (for example, Ehrenberg and Oaxaca, 1976; Keeley and Robins, 1982).

Three kinds of drawbacks affect the empirical implementation in the previous studies. First, the reservation wages of unemployed persons are assumed to be unknown or unavailable for analyses; in these studies, equations were solved to infer reservation wages by applying the condition that employment commences when searchers accept jobs whose offered wages are equal to or greater than the reservation wages (Kiefer and Neumann, 1979a). Second, common measures of unemployment duration are inaccurate in that they represent an incomplete spell of unemployment since data were generally gathered from a survey at a given point in time (Sant, 1977). Thus, empirical findings based upon these estimates of unemployment duration may be biased if the duration of the unemployment spell is not symmetrically distributed. In fact, some recent studies (for example, Parnes, 1982) show that long unemployment periods are concentrated only among a small group of individuals; this finding, to a certain extent, refutes the notion of a random distribution of unemployment duration. Third, the wage rate reported as of the immediately following survey is frequently used as the post-unemployment wage (Ehrenberg and Oaxaca, 1976; Kahn, 1978). Undoubtedly, this approach is inappropriate not only because this measure of the post-unemployment wage rate could differ substantially from the wage rate of the first job after the incidence of unemployment, but also because it excludes those sample members who were not working as of the survey date following the unemployment spell.

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[1] An extensive literature review on job search theory is found in Lippman and McCall (1976). Regarding reservation wage formation, DeGroot (1968) and Rothschild (1974) demonstrated that similar inferences could be made between the assumptions of known and unknown distributions for the wage offer function by assuming optimal job search behavior.

Our analysis overcomes most of these difficulties. Using a recent longitudinal data set, our analysis selects a group of individuals who were unemployed at the initial survey time and traces their subsequent labor market activities. Since information is gathered from each individual's employment history, we are able to identify the wage rate of the first job following the unemployment period and the exact length of the period between the time an unemployed person began searching for a job and the time he or she subsequently found a job. Information about reservation wages as of the initial survey time is also collected and used to examine the determinants of subsequent wages. We also take into account a statistical issue that emerges when initially selecting a sample of unemployed individuals. As Salant (1977) pointed out, a person unemployed for a longer duration has a higher probability of being selected into the sample of the unemployed than one with a shorter period of unemployment. Thus, we apply a methodology developed by Heckman (1976) to account for this selectivity issue.

In section I of this chapter, we discuss some important theoretical and statistical issues concerning the duration of the job search period and the consequences of job search activity. Data and variable explanations appear in section II. Empirical results are analyzed in the next two sections: in section III, the characteristics of those individuals unemployed as of the initial survey time and those who subsequently found employment are discussed, and in section IV, the relationship between the length of the search period and subsequent wage gains is investigated. A summary of findings is contained in the final section.

I. BASIC CONSIDERATIONS: THEORETICAL AND STATISTICAL ISSUES

In the simplest version of job search models, searchers are assumed to maximize the present discounted value of expected wealth subject to the condition that the acceptable wage offer is not lower than the reservation wage. Although this assumption is contained in most job search analyses, different implications are derived depending upon what assumptions are made about job search costs and the time horizon. That is, since job search activities are not costless, the longer a person searches, the smaller are net expected returns; this inference is particularly true if a finite time horizon is also assumed. In fact, the empirical relevance of the inferences regarding the constant versus declining reservation wage hypotheses has been tested in many previous job search studies (for example, Kiefer and Neumann, 1979a; Kahn, 1978).

Similarly, two distinct inferences about the relationship between the length of the search period and subsequent wages are predicted depending upon the assumption of a recall probability. If previous job offers can be retained, then a non-decreasing relationship would be found (Lippman and

McCall, 1976); however, if previous job offers cannot be retained, then a negative relationship would be expected (Salop, 1973).[2] Moreover, if the unemployment period is regarded as a productive investment period for better job matching, as most job search analysts argue (see, Alchian, 1970), then we would even expect to observe a positive relationship between length of search and subsequent wage rate.

The reservation wage equation is specified to have the following form:

$$(1) \qquad w^r = f(\, F(w),\ c,\ r,\ Z_1)$$

where w^r is the reservation wage, $F(w)$ represents the wage offer distribution, c and r denote, respectively, search cost and the subjective discount rate, and Z_1 is a vector of individual characteristics. Job search cost, c, is generally unmeasurable, and the best estimate for it is duration of the job search period; indeed, the direct costs of job search and the indirect costs such as foregone earnings and psychic costs should be very highly correlated with the length of search. The distribution function $F(w)$ is assumed to be known to searchers. In empirical estimations, it is further assumed that the distribution function can be sufficiently characterized by the first and second moment. In an infinite time horizon model, the discount rate, r, becomes somewhat less important. On the other hand, even in a finite time horizon model, r has generally been dropped in empirical specifications due to lack of information (see, for example, Franz, 1980).

The major difficulty in estimating equation (1) is that w^r and c (or duration, D) are jointly determined. In other words, while the reservation wage may vary depending upon the length of search, the search period may also be affected by the reservation wage: the underlying logic for the latter relationship is that searchers who ask too high a reservation wage may have to search longer. Therefore, we now have the following two equation system:

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[2] The expected negative relationship can be explained from both demand and supply side aspects: searchers may accept lower wage offers as the search period increases due to increasing search costs; on the other hand, employers may view a longer nonemployment period as an indicator of undesirable (perhaps, unobservable) individual characteristics and thus may offer lower wages.

$$(2) \qquad w^r = f_{w^r}(\, F(w),\ D,\ r,\ Z_1)$$

$$(3) \qquad D = f_D(\, w^r,\ X_1)$$

where X_1 is a set of other explanatory variables.

Let $g(Z, w)$ denote the probability of receiving a job offer. The probability of a searcher receiving and accepting a job offer then is,

$$(4) \qquad p(Z,\ w^r) = \int_{w^r}^{\infty} g(Z,\ w)\ f(w)\ dw$$

and the expected subsequent wage can be expressed as a conditional mean,

$$(5) \qquad E(w | w > w^r) = \int_{w^r}^{\infty} w\ g(Z,\ w)\ f(w)\ dw | p(Z,\ w^r)$$

By following the reasoning used to extend equation (1) into equations (2) and (3), we can incorporate the duration of the search period into equation (5). Writing $p(Z, w^r)$ on a continuous time domain as $p(t)dt$, $t > 0$ at $w^r(t)$ (see Lancaster, 1979), and integrating results in duration of job search, we have

$$(6) \qquad w^s = f_{w^s}(\, w^r,\ F(w),\ D^s,\ Z_2)$$

$$(7) \qquad D^s = f_{D^s}(\, w^s,\ X_2)$$

where superscript s stands for "subsequent" and Z_2 and X_2 are sets of explanatory variables.

The issue of sample censoring arises when empirically estimating the above equations: for example, accepted (post-unemployment) wages are observed only among those who subsequently found jobs. Indeed, this sample censoring problem also emerges in selecting an original sample of unemployed youths. In this study, we employ the methodology developed initially by Heckman (1976) and later extended to account for the double-selectivity issue by Behrman, Wolfe, and Tunali (1980), among others. Formally,

(8) $q_1^{*} = a_1^{*'} X_1 + e_1^{*'}$

(9) $q_2^{*} = a_2^{*'} X_2 + e_2^{*'}$

(10) $q_3 = a_3^{'} X_3 + k_3 e_3^{'}$

where q_1^{*} and q_2^{*} are, respectively, unobserved probabilities of being unemployed at a given point in time, and subsequently finding a job; $a_j^{(*)'}$ and X_j $(j=1,2,3)$ represent, respectively, vectors of coefficients and right-hand-side variables; k_3 is a scale parameter; and $e_j^{(*)'}$ are assumed to have zero mean and the following covariance matrix (with u representing a correlation coefficient of residual terms)

$$\Sigma = \begin{bmatrix} 1 & u & u_{13} \\ u & 1 & u_{23} \\ u_{13} & u_{23} & 1 \end{bmatrix}.$$

While q_1^{*} and q_2^{*} are not observed, q_1 and q_2 are observed with the following sample selection process:

(11) $q_1=1$ if $q_1^{*} > 0$; $=0$ if $q_1^{*} <= 0$

(12) $q_2=1$ if $q_1=1$ and $q_2^{*}>0$; $=0$ if $q_1=1$ and $q_2^{*} <= 0$; unobserved if $y_1=0$

(13) q_3 is observed if and only if $q_2=1$

Thus, the expected value of q_3 conditional upon $q_2=1$ can be written as:

(14) $E(q_3|q_2=1) = a_3^{'} X_3 + k_3 E(e_3|q_1^{*} > 0, q_2^{*} > 0)$

Behrman, Wolfe, and Tunali (1980) demonstrated that when the two sample selection rules are independent of each other, equation (14) can be expressed as follows with the assumption that the joint density of e_1^{*}, e_2^{*}, and e_3 is trivariate normal:

(15) $q_3 = k_3^{'} + k_3 u_{13} \lambda_1 + k_3 u_{23} \lambda_2 + v_3$,

(16) where $\lambda_j = f(a_j^{'} X_j)/(1-F(a_j^{'} X_j))$, $j=1,2$,

where f(.) and F(.) represent, respectively, the density and distribution function of the standard normal distribution, and λ is the inverse of Mill's ratio which can be computed from probit estimations for equations (8) and (9).

In empirical estimations, the estimates of the λs enter into equations (2), (3), (6), and (7). Thus, our model is specified as follows:

(17) $y_1 = f_1(y_2, y_3, y_4, X_1, \lambda_1, \lambda_2)$

(18) $y_2 = f_2(y_1, y_4, X_2, \lambda_1, \lambda_2)$

(19) $y_3 = f_3(y_4, X_3, \lambda_1)$

(20) $y_4 = f_4(y_3, X_4, \lambda_1)$

where y_1, y_2, y_3, y_4 are, respectively, subsequent wages, subsequent duration, reservation wages as of the initial survey time, and unemployment duration as of the initial survey time; λ_1 and λ_2 are estimates from probit equations (8) and (9), respectively; and X_i (i=1,2,3,4) are vectors of other explanatory variables. By examining the identification problem in estimating system estimators, we employ the three-stage-least-squares (3SLS) method.

II. DATA AND VARIABLES

The data for this analysis are obtained from the 1979, 1980, and 1981 Youth Cohort of the National Longitudinal Surveys of Labor Market Experience (NLS). The nationally representative NLS gathers information about individual, labor market, and environmental characteristics of 12,686 men and women who were 14 to 21 years old as of January 1, 1979 (Center for Human Resource Research, 1982). Unemployed males and females age 18 to 21 as of the 1979 interview date who were subsequently interviewed in 1980 and 1981 constitute the sample of this analysis.[3] By tracing each individual's employment history over time, we identify the wage rate of the first job (SWAGE; y_1) the individual found subsequent to the 1979 unemployment spell as well as the length of time between the 1979 interview date and the date the person subsequently found employment (SDUR; y_2). Two other dependent variables of the analysis are RWAGE (y_3) and UDUR (y_4), the reservation wage and the unemployment duration as of the 1979 survey week, respectively.

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[3] In order to simplify the analysis by minimizing the role of interaction effects between schooling and labor market activities in job search behavior, particularly among high school students, youths under age 18 were not included in this analysis.

The original sample of those unemployed in 1979 includes 332 males (representing 796,000 persons) and 413 females (representing 992,000 persons).[4] Of these, 296 males and 311 females reported that they subsequently found employment by the 1980 or 1981 interview dates. However, to be included in the analysis of subsequent wage determination, each individual had to report the subsequent wage, the date he or she found the first post-unemployment job, the reservation wage and unemployment duration as of the 1979 interview date. In addition, only those individuals reporting reasonable values for the variables used in the analysis are included.[5] The first condition, reporting subsequent wages, turned out to be especially restrictive because the NLS does not gather information about the wage rates of "part-time jobs" (defined as jobs at which the individual worked for less than 20 hours a week and/or for less than 9 weeks) unless the respondents were still working on the jobs during the survey week. These restrictions limit our final sample to 214 males and 241 females.

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[4] The NLS is a nationally representative survey; thus, each individual is assigned a sampling weight, the inverse of the probability of being selected. In this paper, descriptive statistics such as means and standard deviations represent the population estimates where each response is weighted by the respondent's sampling weight. On the other hand, sampling weights are not introduced in equation estimations. The issue as to whether or not survey sampling weights should be used in multivariate analyses is not yet resolved in the literature of statistics. For some interesting discussions about the issues of using sampling weights in regression analyses, see Manski and Lerman (1977), DeMouchel and Duncan (1980), and Fienberg and Picard (1980).

[5] We excluded individuals whose hourly reservation wages in 1979 were less than \$.050 or greater than \$20.00 and those whose subsequent wages on an hourly basis were less than \$.050 or greater than \$25.00.

The following independent variables are used: AGE = age; EDUC = years of schooling; AFOT = the Armed Forces Qualifying Test score (0-105); KOWW = a knowledge of the world of work test score (0-9); UR = the race-sex specific state unemployment rate; SOUTH = 1 if the respondent (R) resides in the South; SMSA = 1 if R lives in an SMSA; MILITARY = 1 if R ever served in the active armed services; HIGH SCHOOL = 1 if R is enrolled in high school; FT-COLL = 1 if R is enrolled in college full time; MARRIED = 1 if R is married; LIPH = 1 if R is living in a parent's house; BLACK = 1 if R is black; HISPANIC = 1 if R is Hispanic; LAYOFF = 1 if the unemployment incidence of R is due to layoff; UI = 1 if R receives unemployment insurance; PREWORK = 1 if R has previously worked between January 1, 1978 and the 1979 interview date; PREWAGE = 1 if PREWORK = 1 and R reported the wage rate of the previous job; and W-MEAN and W-SD = sex-specific mean and standard deviation of the wages, respectively, that employed youths age 18 to 21 earn in the (one-digit) occupation where the (unemployed) R desires to work. These variables basically represent the characteristics of individuals as of the 1979 interview dates although the information on AFOT and UI is obtained from 1980 surveys.

Because we expect the labor market behavior patterns to differ between males and females, we estimate separate equations for each sex; however, due to the small number of sample cases, separate estimations for each race/ethinic group were not attempted.

III. UNEMPLOYMENT AND SUCCESSFUL JOB SEARCH

In this section, we compare the characteristics, first, of those unemployed in 1979 with their counterparts who were employed and, second, of the unemployed who subsequently found a job with those who did not find a job. Probit estimates for equations (8) and (9) are used as the statistical basis of analysis.

Probability of Being Unemployed

Empirically, equation (8) is specified as follows (with the expected signs on the coefficients in parentheses):

$$\text{prob}(q_1=1) = f_{q_1}(\underset{(-)}{\text{AGE}},\ \underset{(-)}{\text{EDUC}},\ \underset{(-)}{\text{AFQT}},\ \underset{(-)}{\text{KOWW}},\ \underset{(?)}{\text{SOUTH}},\ \underset{(?)}{\text{SMSA}},\ \underset{(+)}{\text{MILITARY}},\ \underset{(+)}{\text{HIGH SCHOOL}},\ \underset{(+)}{\text{FT-COLL}},\ \underset{(?)}{\text{MARRIED}},\ \underset{(+)}{\text{LIPH}},\ \underset{(?)}{\text{BLACK}},\ \underset{(?)}{\text{HISPANIC}}) \tag{8)'}$$

In equation (8)', unemployed persons have a value of 1 and those employed as of the 1979 interview date have a value of 0 for the dependent variable.[6] The estimated equations appear in Table 2.1 and the means and standard deviations of each variable are presented in Appendix Table 2.1. The main concern here is to examine the observed systematic differences between unemployed and employed persons.

We find four variables which are significant for both sexes: the unemployment probability is inversely associated with the number of years of schooling and living in the South but positively correlated with veteran status and being a black. For the case of males, those who are enrolled in

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[6] We chose as a reference group employed persons rather than not-unemployed (including those who are not in the labor force) persons. Clark and Summers (1982) claimed that the distinction between unemployment and not-in-the-labor-force (NILF) status among youths is behaviorally meaningless. However, Flinn and Heckman (1983) demonstrated that the two states are clearly different, particularly in terms of probabilities of receiving a job offer; the probability is higher for those in the unemployment state than those in the NILF state. In fact, this contradictory finding appears to stem from the heterogeneous composition of the NILF group: for example, discouraged workers may have higher probabilities of transit between the two states, while the true NILF group such as full time students may have very low transition probabilities. Because of the difficulty in differentiating the NILF group into these two components, we did not include the NILF group in the reference group.

Table 2.1 Probit Estimates for the Probability of Being Unemployed Among 18 to 21 Year Olds Who are in the Labor Force, by Sex: 1979

Variables	Males		Females	
	Coefficients	t-stat[a]	Coefficients	t-stat[a]
Constant	0.0782	0.11	2.3189	3.36**
AGE	-0.0011	-0.03	-0.0445	-1.25
EDUC	-0.0973	-3.52**	-0.1231	-4.22**
AFQT	-0.0010	-0.42	-0.0093	-3.63**
KOWW	-0.0336	-1.59	-0.0284	-1.34
SOUTH	-0.1829	-2.21*	-0.1477	-1.85+
SMSA	0.1242	1.49	-0.2392	-3.02**
MILITARY	0.3547	2.23*	0.0900	3.64**
HIGH SCHOOL	0.0612	0.54	-0.0572	-0.45
FT-COLL	0.2356	2.01*	0.1127	1.08
MARRIED	-0.1193	-0.80	0.1331	1.25
LIPH	0.2327	2.37*	0.0446	0.52
BLACK	0.4726	4.83**	0.5171	5.32**
HISPANIC	-0.0200	-0.18	-0.0686	-0.60
-2 * log likelihood ratio	103.47		211.03	
N, sample size	1809		1839	

[a] Asymptotic t-statistics.

**Significant at the 0.01 significance level, one tailed test.
* Significant at the 0.025 significance level, one tailed test.
+ Significant at the 0.05 significance level, one tailed test.

college full time and those who live with their parents have higher probabilities of being unemployed than their respective counterparts. Among females, the unemployment probability is inversely related to the AFQT score; those who live in an SMSA have lower probabilities of being unemployed, compared to those who live in a non-SMSA.

Probability of Finding a Job Among Those Who Were Unemployed in 1979

The empirical specification of equation (9), similar to equation (8)', is shown below with the expected signs on the coefficients denoted in parentheses.

$$\begin{gathered}(9)' \quad \text{prob}(q_2=1) = f_{q_2}(\underset{(+)}{\text{AGE}}, \underset{(+)}{\text{EDUC}}, \underset{(+)}{\text{AFQT}}, \underset{(+)}{\text{KOWW}}, \underset{(-)}{\text{UR}}, \underset{(?)}{\text{SOUTH}}, \underset{(?)}{\text{SMSA}}, \underset{(?)}{\text{MILITARY}}, \\ \underset{(?)}{\text{HIGH SCHOOL}}, \underset{(?)}{\text{FT-COLL}}, \underset{(+)}{\text{MARRIED}}, \underset{(-)}{\text{LIPH}}, \underset{(?)}{\text{BLACK}}, \underset{(?)}{\text{HISPANIC}}, \underset{(?)}{\text{LAYOFF}}, \underset{(?)}{\text{UI}}, \underset{(+)}{\text{PREWORK}})\end{gathered}$$

In equation (9)', individuals who were unemployed in 1979 but subsequently found a job (by the 1981 interview date) have a value of 1 and those who did not find a job have a value of 0 for the dependent variable. The estimated results are shown in Table 2.2. Appendix Table 2A.2 compares the individual attributes of those who subsequently found a job and those who did not.

About 90 percent of males and nearly 80 percent of females eventually found a job (Appendix Table 2A.2). As revealed in Table 2.2, we are not successful in differentiating individual characteristics between those who found a job and those who did not, particularly among males. That is, for the case of males, neither general individual attributes such as the variables included in equation (8)' nor the newly added variables, the unique features of the unemployed such as LAYOFF, UI, and PREWORK (capturing the labor market

Table 2.2 Probit Estimates for the Probability of Finding a Job Among 18 to 21 Year Olds Who were Unemployed in 1979, by Sex

Variables	Males		Females	
	Coefficients	t-stat[a]	Coefficients	t-stat[a]
Constant	1.4893	0.72	-1.8510	-1.27
AGE	-0.0624	-0.59	0.0186	0.26
EDUC	0.1062	1.25	0.1357	2.22*
AFQT	0.0043	0.62	0.0058	1.03
KOWW	-0.0380	-0.62	.0685	1.65+
UR	-0.0312	-0.60	-0.0011	-0.03
SOUTH	0.1682	0.55	0.2930	1.67+
SMSA	-0.0338	-0.13	0.0920	0.54
MILITARY	0.6278	1.18	0.3921	0.67
HIGH SCHOOL	0.4353	1.38	0.2375	0.94
FT-COLL	0.3065	0.74	0.0672	0.25
MARRIED	3.4734	0.12	-0.0750	-0.33
LIPH	-0.4964	-1.34	0.0262	0.14
BLACK	0.2130	0.49	-0.6406	-2.15*
HISPANIC	0.6721	1.40	-0.0351	-0.12
LAYOFF	0.6279	1.29	0.1024	0.18
UI	0.2142	0.41	0.3067	0.71
PREWORK	0.0205	0.10	0.2214	1.29
-2 * log likelihood ratio	25.42		60.43	
N, sample size	319		401	

[a] Asymptotic t-statistics.

*Significant at the 0.025 significance level, one-tailed test.
+Significant at the 0.05 significance level, one-tailed test.

reentrant status) yield statistically significant coefficients.[7]

Among females, however, those who found a job are, as compared to those who did not find a job, more likely to have attained more years of schooling, to be more knowledgeable about the labor market (as measured by KOWW), and to live in the South than in the non-South, other things being equal. Black females are less likely to find a job than other females.

In sum, the individual characteristics of the unemployed generally follow the expected pattern; in particular, as compared to their employed counterparts, unemployed persons were less educated. Being a black or a veteran also increased the probability of being unemployed and living in the South decreased the probability. On the other hand, a majority of individuals unemployed in 1979 subsequently found a job by the 1981 interview date. Somewhat surprisingly, we do not find statistically significant characteristic differences between those who found a job and those who did not find a job among males. Therefore, we conclude that for unemployed youths age 18 to 21, the focus of youth unemployment analysis should be directed toward the consequential wage gains accruing to job search activities, not towards the probability of reemployment, perhaps due to the availability of alternative activities such as schooling or occupational training.

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[7] The finding of no significant characteristic differences between those who found a job and those who did not find a job was somewhat embarrassing since it implies, given the model specification, job finding reflects a random behavior. Therefore, we examined the labor market activities as of the 1981 survey date for 36 males and 102 females who had not found a job subsequently. We found that during the 1981 interview date, 26 males and 26 females were looking for jobs; 8 males and 73 females were out of the labor force; and 2 males and 3 females were working (those who said they were working did not report their wage rates). Among those who were looking for jobs, the mean length of the job search period as of the 1981 interview week were only about 14 weeks for each sex, indicating that they had been out of the labor force for some time since the unemployment spell in 1979. Further, we also compared their mean reservation wages reported in 1979 and in 1981. For both sexes, the mean reservation wages were higher in 1981 than in 1979 ($4.18 vs. $3.80 for males; $3.57 vs. $3.01 for females). This result may imply that these youths do not necessarily represent those who were not employable.

IV. DURATION OF JOB SEARCH, RESERVATION WAGES, AND SUBSEQUENT WAGES

In this section, we discuss the empirical results of equations (17) to (20). Because the dependent variables in equations (17) to (20) are specified to be determined jointly, we apply the three-stage-least-squares estimation procedure (3SLS).[8]

Descriptive Statistics

The means and standard deviations of the four dependent variables are presented in Table 2.3. The mean values of SWAGE and RWAGE are higher for males than for females by about 25 percent; for both males and females, the mean value of SWAGE is about 20 percent higher than that of RWAGE: $4.73 vs. $3.93 for males, and $3.77 vs. $3.15 for females. On the average, males found a job about 6 months after the 1979 interview date (SDUR) while females averaged about 7 months. The mean length of job search as of the 1979 interview date (UDUR) was about the same for males and females (1.8 months).

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[8] We also experimented with the two-stage-least-squares (2SLS) and limited-information-maximum-likelihood (LIML) techniques, which are basically single equation estimators. The estimates from the 3SLS procedure, which are system estimators, are asymptotically more efficient than those from the 2SLS technique because the 3SLS technique uses information from a covariance matrix of the stochastic disturbance terms of the structual equations derived from the residuals of the 2SLS estimates; basically, the 3SLS method is a generalized least squares application of the 2SLS estimation method. Since asymptotic efficiency is achieved from 3SLS, we did not attempt the iterative 3SLS technique (Madansky, 1964). For a detailed explanation of this estimation procedure, see Klein (1974) and Intrilligator (1978).

Table 2.3 Means and Standard Deviations (in parentheses) for Subsequent Wages, Reservation Wages in 1979, and Durations of Search Period Among Total Unemployeds and Previously Employed, by Sex[a]

Variables	Males	Females
	Total unemployed	
SWAGE (in dollars)	4.73 (2.80)	3.77 (2.31)
RWAGE (in dollars)	3.93 (1.64)	3.15 (5.77)
SDUR (in months)	5.91 (4.95)	7.13 (5.85)
UDUR (in months)	1.76 (2.34)	1.83 (2.68)
Total (000s)	716	788
N, sample size	296	311
	Previously employed[c]	
SWAGE (in dollars)	4.86 (2.91)	3.68 (1.35)
RWAGE (in dollars)	4.06 (1.71)	3.19 (0.52)
PWAGE (in dollars)[b]	3.99 (2.12)	3.00 (1.12)
SDUR (in months)	5.54 (4.67)	6.53 (5.57)
UDUR (in months)	1.67 (2.01)	1.67 (1.83)
Total (000s)	595	580
N, sample size	241	222

[a] Means and standard deviations represent the population estimates where each response is weighted by the respondent's sampling weight.

[b] PWAGE = hourly wage rates of the most recent previous job.

[c] Previously employed are defined as those who had worked between January 1, 1978 and the 1979 interview date.

These results suggest that it took, on the average, a longer time (by about one month) for females to find a job than for males; however, for both sexes, job search activity yielded productive returns in terms of subsequent wage gains.

One key individual characteristic that we wanted to control throughout this analysis is an individual's previous labor market experience. Particularly for the youngest age group, persons searching for jobs consist of two groups: new entrants and persons previously employed. We suspect that there might exist unobserved characteristic differences between new entrants and those employed earlier with regard to job search methods and reservation wage formation processes; therefore, we use previously employed status as a proxy for possible characteristic differences.[9]

Over 80 percent of males and 70 percent of females are classified as previously employed. The bottom panel of Table 2.3 presents the corresponding means and standard deviations for them (i.e., PREWORK=1). Although the differences are not substantial, we find that for males, the means of SWAGE and RWAGE are higher than among all unemployed persons and, thus, than among new entrants; for females, the mean SWAGE is, on the other hand, lower among the previously employed.[10] The mean duration of job search is slightly shorter among previously employed than among all unemployed persons. The mean RWAGE is slightly higher than the mean wage of the most recent previous job for both males and females, implying that the unemployment behavior of these persons may be explained within the the framework of job search theory.

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[9] In this study, the previously employed are defined as those who have held a job between January 1, 1978 and the 1979 interview date.

[10] The mean values for new entrants can be easily computed from Table 2.3. The mean values of SWAGE for males and females among new entrants are $4.09 and $4.02, respectively.

Empirical Results

The empirical specifications of the four equations (17)-(20) are as follows:

$$(17)' \quad \text{SWAGE}(y_1) = h(\text{AGE, EDUC, AFQT, BLACK, HISPANIC}, \lambda_1, \lambda_2, \text{PREWORK}, y_2, y_3, y_4)$$

$$(18)' \quad \text{SDUR}(y_2) = i(\text{HIGH-SCHOOL, FT-COLL, MARRIED, MILITARY, LIPH, BLACK, HISPANIC}, \lambda_1, \lambda_2, \text{UI, PREWORK}, y_1, y_4)$$

$$(19)' \quad \text{RWAGE}(y_3) = j(\text{BLACK, HISPANIC}, \lambda_1, \text{PREWORK, W-MEAN, W-SD}, y_4)$$

$$(20)' \quad \text{UDUR}(y_4) = k(\text{HIGH-SCHOOL, FT-COLL, UR, SOUTH, MILITARY, LIPH, BLACK, HISPANIC}, \lambda_1, \text{UI, PREWORK}, y_3)$$

Because the dependent variables take only positive values, we estimated the equations by transforming the variables into a logarithmic form. Regarding the empirical specifications, several comments are in order. First, the SWAGE equation includes human capital variables such as EDUC and AFQT, following the conventional specification of the wage equation.[11] Second, the main concerns of the duration equations SDUR and UDUR are the factors for the cost of job search and the constraints on employment; thus, we introduce UI and LIPH, which lower job search costs, and enrollment status, which might restrict the choice of available jobs. Third, RWAGE is assumed to be mainly a function of the wage offer distribution; W-MEAN and W-SD are used as proxies for the first and second moment of the wage offer distribution.

Empirical Findings: Males

The 3SLS estimators for males are presented in Table 2.4. Although we treat all y_i (i=1,2,3,4) as endogenous variables in the model, due to the

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[11] Regional variables such as South and UR, and enrollment status variables are generally included as control variables in the wage equation. However, we did not include the variables in equation (17)' because the variables we use in this analysis refer to the location and enrollment status of respondents as of the 1979 interview date.

Table 2.4 Three-Stage-Least-Squares Estimates for SWAGE(Y_1), SDUR (Y_2), RWAGE (Y_3), and UDUR (Y_4): Males

(t-statistics in parentheses)

Variables	SWAGE	SDUR	RWAGE	UDUR
Constant	1.5970 (1.13)	-7.4599 (-2.05)	5.0694 (22.77)	4.1885 (0.96)
AGE	-0.0003 (-0.01)	-	-	-
EDUC	0.0137 (0.64)	-	-	-
AFOT	0.0003 (0.26)	-	-	-
HIGH SCHOOL	-	0.0176 (0.10)	-	-0.6036 (-2.88)
FT-COLL	-	-0.0615 (-0.29)	-	-0.4351 (-2.34)
MARRIED	-	0.0180 (0.07)	-	-
UR	-	-	-	0.0566 (1.77)
SOUTH	-	-	-	-0.1972 (-1.04)
MILITARY	-	-0.2324 (-0.79)	-	0.0953 (0.29)
LIPH	-	-0.0446 (-0.28)	-	0.1437 (0.70)
BLACK	-0.0907 (-0.83)	0.1526 (0.62)	0.0178 (0.35)	-0.1852 (-0.61)
HISPANIC	-0.1555 (-1.51)	0.3863 (1.45)	-0.0616 (-1.23)	-0.0844 (-0.32)
1	0.0401 (0.19)	-0.2454 (-0.48)	-0.0129 (-0.15)	0.3782 (0.84)
2	-0.5621 (-1.92)	1.1257 (1.25)	-	-
UI	-	0.0191 (0.09)	-	0.4961 (1.88)
PREWORK	0.0562 (0.63)	-0.3115 (-1.43)	0.1003 (2.12)	-0.1856 (-0.98)
W-MEAN	-	-	0.2480 (4.31)	-
W-SD	-	-	-0.1932 (-1.97)	-
SWAGE, Y_1	-	1.5656 (2.56)	-	-
SDUR, Y_2	0.3710 (3.77)	-	-	-
RWAGE, Y_3	0.6296 (2.58)	-	-	-0.7934 (-1.05)
UDUR, Y_4	0.1296 (1.41)	-0.3920 (-1.28)	0.0951 (2.06)	-

sequential timing of the determination process, y_3 and y_4 are solved first and then the estimated results enter the equations for y_1 and y_2. Therefore, we begin by discussing the results for y_3 and y_4.

Contrary to findings from previous studies (Kasper, 1967; Stephenson, 1976), we find a positive and significant relationship between UDUR and RWAGE. Our finding is somewhat surprising because a positive relationship indicates that unemployed youths increase their asking wages as the search period lengthens. This finding may simply reflect that during a short-run period (say, less than 2 months in our sample), job searchers revise their asking wages upward by updating their information about the wage offer distribution. However, although the positive relationship is significant, the impact of UDUR on RWAGE is not substantial. That is, the elasticity of RWAGE with respect to UDUR is rather small, 0.0951.[12] For example, at the mean value of UDUR (about 8 weeks in our sample), an increase in UDUR by one week would increase RWAGE by only about one percent (as computed by 12.5% * 0.0951), which is less than 4 cents.

The coefficient of the variables capturing the first and second moments of the wage offer distribution--W-MEAN and W-SD, respectively--turned out to be significant. The positive coefficient of W-MEAN is expected because individuals who expect to receive a higher wage offer are more likely to ask higher wages. Further, the magnitude of the coefficient, 0.2480, reveals that the RWAGE of an unemployed person is highly responsive to the expected wage offer. That is, at the mean value of W-MEAN, \$4.05, an increase in W-MEAN by one dollar or by 25 percent would increase RWAGE by 25 percent, which implies unitary elasticity.

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[12] Remember that the y_i are in logarithmic form; thus, the coefficient represents a constant elasticity. The small impact of UDUR on RWAGE is also found in a previous study. Stephenson (1976) reported that for each week of unemployment, male youth reduce their reservation wage by 0.014 percent. Since the mean value of reservation wage in his study was about $2.00, the result means that each additional week of unemployment reduces the reservation wage by merely 0.028 cents.

The negative sign on the coefficient of W-SD needs further clarification. Theoretically, the sign on the coefficient of W-SD, a_{SD}, is ambiguous. To illustrate, let w_0 denote a searcher's mean expected wage and $f(w)$ represent the density function of the wage offer distribution. As shown in Figure 2.1, if a searcher has a reservation wage, RW_A, which is larger than w_0, then the reservation wage is presumed to be positively correlated with the variance of the wage offer distribution: the area under $f(w)_2$ is greater than that under $f(w)_1$ by the shaded area, A. On the other hand, if a searcher's reservation is RW_B, which is smaller than w_0, then the variance will negatively affect reservation wages: the area to the right of RW_B under $f(w)_2$ is smaller than that under $f(w)_1$ by the shaded area, B. As a result, the theoretical expectation is: if $RW > w_0$, then $a_{SD} > 0$; if $RW < w_0$, then $a_{SD} < 0$.[13]

Our empirical finding of a negative coefficient indirectly suggests that, on the average, the RWAGE of unemployed persons lies below W-MEAN.[14] This finding may be interpreted in a different way. In reality, high wage occupations such as professionals and craftsmen have higher wage variances than low wage occupations such as service workers. Thus, we can infer that, other things being equal (including W-MEAN), unemployed males desiring to work

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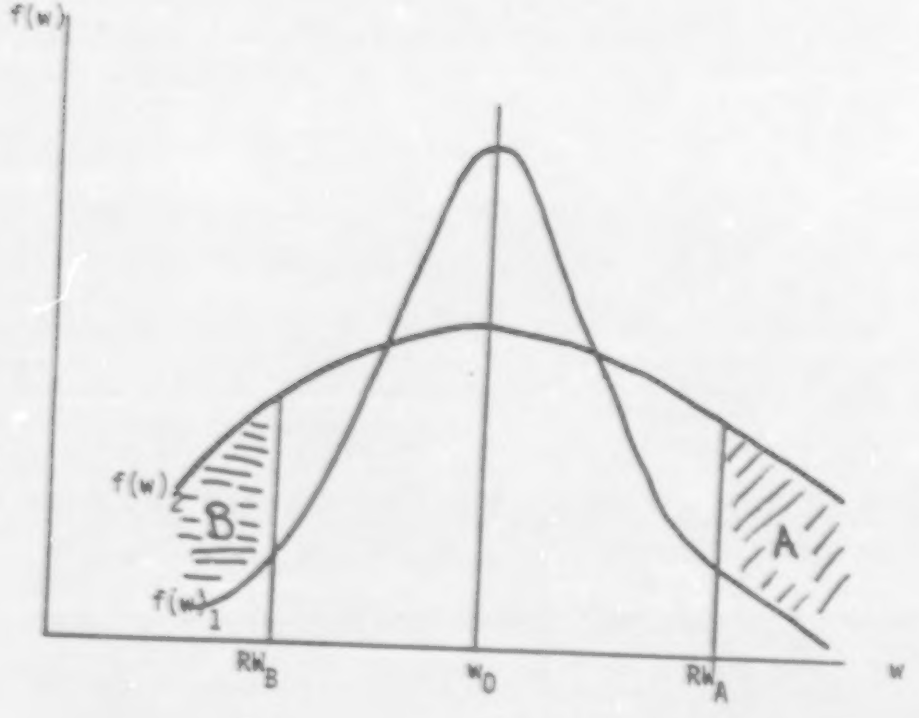
[13] In the case $RW=w_0$, the sign on a_{SD} is indeterminate. For a detailed discussion, see Rothschild (1974) and Franz(1980).

[14] We checked our finding with the actual data of our sample members. The mean values of RWAGE and W-MEAN are, respectively, \$3.58 and \$4.05, which are consistent with our empirical finding.

Figure 2.1 Reservation Wage and Variance of Wage Offer Distribution



in large wage variance occupations, thus high wage occupations, have relatively lower reservation wages.

The PREWORK variable also produced a positive and significant coefficient, indicating that RWAGE of unemployed youths who have previously worked is higher than that of new entrants by about 11 percent (as computed by exp(0.1003) - 1).

Somewhat unexpectedly, the coefficient of RWAGE in the UDUR equation was statistically insignificant. Our results also show that UDUR is positively associated with UI and UR. The positive coefficient of UI is consistent with the expected theoretical relationship. It has been generally known that receipt of unemployment insurance lowers the relative costs of non-market activities including job search costs, thus, prolonging job search activity, particularly in the short-run (Burdett, 1979). The results also reveal that the unemployment duration of enrolled youths is considerably shorter than that of non-enrolled youths.

As explained earlier, the main issue in the analysis of the relationship between SWAGE and SDUR is the empirical test of two different search models: a systematic search model without a recall probability (Salop, 1973) and a random search model with a recall probability (Lippman and McCall, 1976). A negative relationship is theoretically expected in the former model, while a nonnegative association is predicted for the latter model.

Our empirical findings turned out to be consistent with the random search model with a recall probability. The results demonstrate that as individuals search longer, the resulting wages would be higher, and vice versa.[15] This finding has a significant implication: search activities yield positive returns. Public attention has been focused on youth unemployment because unemployment has been thought to bring grave consequences such as a likelihood of recurrent unemployment and a reduction in life-time earnings. However, as long as job search behavior produces positive returns, job search could be regarded as an investment activity.

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[15] Kahn(1978), using data from the 1967 Survey of Economic Opportunity, found results that support the Salop(1973) model, a systematic search model without a recall probability. However, due to the substantially different specifications of the model, Kahn's findings and ours cannot be directly compared. It may well be that the systematic search model explains the job

This argument is, in fact, further strengthened by the finding of a positive relationship between RWAGE and SWAGE. Although we do not observe the reservation wage at the time the unemployed person eventually found a job, we can safely assume that the reservation wage at the time was close to SWAGE. Earlier, we reported that the mean of SWAGE was about 20 percent higher than the mean of RWAGE. These findings indeed negate the argument that youths are unemployed not because they do not receive acceptable job offers but because they do not receive job offers at all (Kahn, 1978).

Empirical Findings: Females

We find significantly different behavior patterns for females than for males (Table 2.5). Unlike for males, RWAGE and UDUR for females were not significantly associated. The nonsignificant relationship serves as supportive evidence for the constant reservation wage hypothesis. On the other hand, as in the case of males, RWAGE is significantly and positively affected by the expected wage offer and is significantly and negatively correlated with the variance of the wage offer distribution[16]; also, females

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search behavior of older workers, while the random search model describes the job search behavior of younger workers. On the other hand, Gera and Hasan (1982), using Canadian survey data, found supportive evidence for the Salop model among males and for the Lippman and McCall model among females.

[16] The mean values for RWAGE and W-MEAN among females are $3.18 and $3.50, respectively. These results are consistent with the negative coefficient of W-SD. The result among males is reported in footnote 14.

Table 2.5 Three-Stage-Least-Squares Estimates for SWAGE (Y_1), SDUR (Y_2), RWAGE (Y_3), and UDUR (Y_4): Females

(t-statistics in parentheses)

Variables	SWAGE	SDUR	RWAGE	UDUR
Constant	-0.5384 (-0.26)	2.2293 (0.62)	5.2918 (32.95)	-5.4935 (-1.01)
AGE	0.0161 (0.67)	-	-	-
EDUC	-0.0385 (-1.55)	-	-	-
AFQT	0.0029 (1.57)	-	-	-
HIGH SCHOOL	-	0.0961 (0.44)	-	-0.0424 (-0.24)
FT-COLL	-	0.0682 (0.31)	-	-0.0017 (-0.01)
MARRIED	-	-0.2080 (-1.10)	-	-
UR	-	-	-	0.0453 (1.57)
SOUTH	-	-	-	-0.1271 (-0.94)
MILITARY	-	-0.0360 (-0.06)	-	-0.4238 (-1.21)
LIPH	-	0.1147 (0.72)	-	-0.1655 (-1.34)
BLACK	-0.0101 (-0.11)	-0.2030 (-0.85)	0.0230 (0.66)	-0.0490 (-0.18)
HISPANIC	0.0993 (1.24)	0.0582 (0.27)	-0.0323 (-0.81)	-0.1469 (-0.64)
1	0.3337 (2.08)	0.1271 (0.19)	-0.0378 (-0.79)	-0.1407 (-0.59)
2	0.2465 (1.14)	0.5586 (0.63)	-	-
UI	-	0.1329 (0.37)	-	0.6087 (2.57)
PREWORK	-0.0752 (-0.99)	-0.4118 (-2.68)	-0.0069 (-0.23)	0.0938 (0.69)
W-MEAN	-	-	0.1759 (3.45)	-
W-SD	-	-	-0.0896 (-2.56)	-
SWAGE, Y_1	-	-0.1406 (-0.20)	-	-
SDUR, Y_2	-0.1781 (-1.39)	-	-	-
RWAGE, Y_3	1.0631 (2.76)	-	-	0.9578 (1.01)
UDUR, Y_4	0.1266 (1.11)	0.4161 (0.86)	0.0399 (0.73)	-

who receive unemployment insurance are more likely to search longer than those who do not.

Contrary to the case of males, the relationship between SWAGE and SDUR turned out to be negative although it was not statistically significant. The implication of this finding is that as the search period becomes longer, unemployed females tend to accept marginally lower wages. On the other hand, SWAGE is highly responsive to RWAGE: the elasticity of SWAGE with respect to RWAGE is about one.

It is not readily apparent from our study why the observed structural relationships among the four dependent variables differ between males and females. Frequently, the different patterns in labor market behavior between males and females, particularly among older workers, is attributed to the availability of alternative non-market activities of women--household activities (Johnson, 1983). Although we expected that the issue of alternative household activities would be less relevant in the analysis for a young age group like ours than for an older age group, it may well be that females who had alternative nonmarket activities had already left the labor market, and thus were not included in our sample; therefore, only those who did not have alternatives had to remain in the labor market and experienced adverse labor market consequences.

Alternative Approach

Here, we alter slightly the focus of analysis. Based upon the same theoretical framework as that of the earlier analysis, we now ask how much wage gain unemployed persons achieve from job search by comparing the wage they accept with their reservation wage as of the 1979 interview date. In this scheme, we have two dependent variables: DWAGE, defined as the

Table 2.6 Three-Stage-Least-Squares Estimates for the Difference Between SWAGE and RWAGE (DWAGE) and SDUR, by Sex

Variables	Males		Females	
	DWAGE	SDUR	DWAGE	SDUR
Constant	-0.4025 (-1.02)	1.4011 (1.61)	-0.4838 (-0.73)	1.5536 (1.84)
AGE	-0.0013 (-0.09)		0.0181 (0.87)	
EDUC	-0.0001 (-0.01)		-0.0367 (-1.59)	
AFQT	0.0002 (0.26)		0.0026 (1.38)	
MARRIED		0.0106 (0.05)		-0.1979 (-1.13)
MILITARY		-0.1032 (-0.42)		0.0148 (0.03)
BLACK	-0.0545 (-0.55)	0.1663 (0.65)	-0.0004 (-0.01)	-0.1008 (-0.59)
HISPANIC	-0.0974 (-1.12)	0.2843 (1.16)	0.0901 (1.25)	0.0951 (0.49)
1	0.1312 (0.70)	-0.4217 (-0.83)	0.3004 (2.20)	0.1359 (0.28)
2	-0.4977 (-1.99)	1.3938 (1.80)	0.2649 (1.30)	0.4726 (0.75)
PREWORK	-0.0246 (-0.32)	0.0320 (0.14)	-0.0573 (-0.94)	-0.3567 (-2.60)
W-MEAN	-0.0120 (-0.21)		0.0787 (0.93)	
W-SD	0.0494 (0.46)		0.0396 (0.67)	
DWAGE		2.6691 (3.69)		0.4921 (-0.70)
SDUR	0.3195 (3.92)		-0.1912 (-1.92)	

difference between log values of SWAGE and RWAGE, and SDUR. The 3SLS results estimated for males and females are reported in Table 2.6.

For the case of males, we find qualitatively the same result as the one we discussed in the previous section. Those who search longer are likely to receive higher subsequent wages relative to reservation wages and vice versa. The coefficient of SDUR, 0.3195, indicates that a 3 percent increase in SDUR results in one percentage point increase in the ratio of SWAGE over RWAGE.

A distinction between the findings of this specification and the earlier one is that a significantly negative effect of SDUR on DWAGE is revealed among females. The coefficient of SDUR indicates that one percent increase in SDUR decreases the ratio of SWAGE over RWAGE by 0.19 percentage point as contrasted to the finding of a nonsignificant impact of SDUR on DWAGE in the previous specification.

In sum, our empirical results for females are consistent with the Kahn's (1978) finding of an inverse relationship between the length of job search and the resulting wage, supporting the hypothesis of a systematic search model without a recall probability. On the other hand, the results for males support the hypothesis of a random search model with a recall probability, indicating that job search yields positive returns.[17, 18]

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[17] Gera and Hasan (1982) also found opposing results between males and females. However, their results, exploring Canadian survey data, showed a pattern opposite to ours in that positive returns from job search were found among females, while negative returns from job search were observed among males.

[18] Throughout this analysis, we did not discuss the coefficients of the variables, λ_1 and λ_2. Basically, in order to account for a selectivity bias, these variables were included to make the conditional expectation of the error term in equation (10) be zero. An intuitive interpretation of this variable is found in Berk and Ray (1982).

V. A SUMMARY OF FINDINGS AND CONCLUSIONS

This longitudinal analysis, using information from the 1979, 1980, and 1981 NLS Youth Cohort, investigated the consequences of job search activities among males and females age 18 to 21. In the first part of the analysis, we analyzed the determinants of the probabilities of being unemployed among those in the labor force and the factors influencing the probabilities of finding a job among those unemployed. In the second part, we examined the relationships among reservation wage, duration of job search, and subsequent wage gain. In order to take sample selectivity into account, we applied a methodology developed initially by Heckman (1976); for the joint estimations of the structural relationships among reservation wages, duration of job search, and subsequent wages, we used the three-stage least squares estimation technique.

The data showed that about 90 percent of males and nearly 80 percent of females who were unemployed in 1979 eventually found a job before the 1981 interview date. On the average, males found a job about 6 months after the 1979 interview date, while females averaged about 7 months. Further, among those who subsequently found a job, for both males and females, the mean value of the subsequent wage is about 20 percent higher than that of the reservation wage as of the 1979 interview week.

As contrasted to most previous studies, our study is unique because it uses information from each individual's employment history. Although we discussed various aspects of the youth unemployment phenomena, the main focus of the analysis was on examining whether or not the length of the job search period leads to positive returns in terms of subsequent wage gains. Major findings of our analysis are that a positive relationship between subsequent wage and the length of job search period was found for males, supporting the inferences from the random job search model with a recall probability; and that a non-positive or a negative association between them was observed for females, depending upon the specification of the model, coinciding with the predictions from the systematic job search model without a recall probability. Many previous empirical studies displayed supporting evidence for a negative relationship between the length of the job search period and subsequent wage gains.

The finding of positive returns to job search activities among male youth holds significant policy implications. The focus of youth unemployment research in the past has been on determining whether youth unemployment reflects a supply-side phenomenon (i.e., unemployment due to too high reservation wages) or a demand-side constraint (i.e., due to lack of the demand for youth employment). Our result for males, however, leads to a different conclusion: although unemployment may indicate a temporary economic loss in the sense that they have to search for some time (say for about six months), the fact that they eventually find a job whose wage is substantially higher than their reservation wage indicates that job search can be a form of investment. This implies that particularly for older male youth unemployment policies should be directed toward facilitating the job-matching process to decrease the duration of job search--for example, by providing better job finding services.

Appendix 2A

On the issues of a stochastic employment process and a non-linear effect of SDUR on SWAGE.

The main focus of the analysis in the text was on the consequences of job search in terms of the structural relationship between SWAGE and SDUR. There are, however, two additional issues which were not dealt with in the text. First, employment represents, to a certain extent, a stochastic process: in other words, some individuals are luckier than others. Second, there is the possibility of a non-linear relationship between SWAGE and SDUR: for example, some studies reported that long-term unemployment is concentrated among a small group of unemployed persons (Cocoran and Hill, 1979; Parnes, 1982).

In order to elaborate the first issue, we constructed the following three-state categorical variable: p = 1 if SWAGE > 1.1 * RWAGE (called p_1); p = 2 if SWAGE >= 0.9 * RWAGE and SWAGE <= 1.1 * RWAGE (called p_2); and p = 3 if SWAGE < 0.9 * RWAGE (called p_3). Basically, under the assumption that the reservation wage was formed rationally, we attempted to classify individuals into three categories: those who are luckier than average persons, average persons, and those who are unluckier than average persons. The proportion of each category, p_1, p_2, p_3 from the sample members were, respectively: 0.47, 0.24, and 0.28 for males; 0.47, 0.36, and 0.17 for females. Using a methodology developed by Theil (1970), we estimate multinomial logit equations for the probabilities p_1, p_2, and p_3. That is, we estimate

(21) $\ln (p_2/p_1) = XA_a$

(22) $\ln (p_3/p_1) = XA_b$

and then solve for the estimates of p_1, p_2, and p_3 by applying the condition that the sum of estimated probabilities equals to one.

Appendix Table 2A.1 Means and Standard Deviations of Selected Characteristics Among Unemployed and Employed Youths Age 18 to 21 by Sex: 1979[a]

Variables	Males		Females	
	Unemployed	Employed	Unemployed	Employed
AGE	19.37 (1.17)	19.54 (1.11)	19.35 (1.12)	19.55 (1.11)
EDUC	11.19 (1.53)	11.84 (1.51)	11.51 (1.48)	12.31 (3.25)
AFQT	64.25 (23.24)	74.07 (20.77)	64.11 (21.98)	76.01 (18.05)
KOWW	5.98 (2.31)	6.85 (1.94)	6.00 (2.22)	6.81 (1.81)
SOUTH	0.29 (0.45)	0.28 (0.45)	0.36 (0.48)	0.28 (0.45)
SMSA	0.74 (0.44)	0.69 (0.46)	0.62 (0.49)	0.74 (0.44)
MILITARY	0.06 (0.23)	0.03 (0.17)	0.01 (0.12)	0.01 (0.07)
HIGH SCHOOL	0.15 (0.36)	0.11 (0.31)	0.10 (0.31)	0.06 (0.25)
FT-COLL	0.16 (0.37)	0.19 (0.39)	0.17 (0.37)	0.22 (0.42)
MARRIED	0.06 (0.25)	0.11 (0.31)	0.24 (0.43)	0.19 (0.39)
LIPH	0.82 (0.38)	0.68 (0.47)	0.56 (0.50)	0.55 (0.50)
BLACK	0.28 (0.45)	0.10 (0.30)	0.27 (0.44)	0.10 (0.30)
HISPANIC	0.07 (0.25)	0.06 (0.23)	0.06 (0.24)	0.05 (0.22)
Total (000s)	796	5414	992	4863
N, sample size	332	1568	413	1482

[a] Means and standard deviations represent the population estimates where each response is weighted by the respondent's sampling weight.

Appendix Table 2A.2 Selected Characteristics of Those Who Found a Job Subsequently (SUBJOB = 1) and Those Who Did Not Find a Job (SUBJOB = 0), by Sex: 18 to 21 Years Old Who Were Unemployed in 1979[a]

Variables	Males		Females	
	SUBJOB = 1	SUBJOB = 0	SUBJOB = 1	SUBJOB = 0
AGE	19.41	19.07	19.39	19.21
	(1.16)	(1.23)	(1.12)	(1.14)
EDUC	11.24	10.81	11.68	10.86
	(1.48)	(1.87)	(1.42)	(1.54)
AFQT	64.83	59.17	67.44	51.25
	(22.74)	(26.74)	(20.83)	(21.57)
KOWW	6.03	5.54	6.27	4.98
	(2.37)	(1.59)	(2.02)	(2.63)
UR	6.48	7.46	7.83	9.74
	(3.53)	(4.17)	(3.48)	(4.09)
SOUTH	0.30	0.18	0.36	0.37
	(0.46)	(0.38)	(0.48)	(0.48)
SMSA	0.74	0.71	0.61	0.67
	(0.44)	(0.46)	(0.49)	(0.47)
MILITARY	0.06	0.02	0.02	0.00
	(0.24)	(0.13)	(0.13)	(0.02)
HIGH SCHOOL	0.16	0.12	0.10	0.13
	(0.37)	(0.32)	(0.30)	(0.34)
FT-COLL	0.17	0.10	0.19	0.06
	(0.37)	(0.30)	(0.40)	(0.25)
MARRIED	0.07	0.00	0.24	0.25
	(0.26)	(0.00)	(0.43)	(0.43)
LIPH	0.81	0.96	0.57	0.54
	(0.40)	(0.19)	(0.50)	(0.50)
BLACK	0.26	0.38	0.22	0.48
	(0.44)	(0.49)	(0.41)	(0.50)
HISPANIC	0.07	0.04	0.06	0.07
	(0.26)	(0.20)	(0.24)	(0.26)
LAYOFF	0.19	0.02	0.06	0.03
	(0.39)	(0.15)	(0.24)	(0.17)
UI	0.11	0.02	0.08	0.03
	(0.32)	(0.15)	(0.28)	(0.17)
PREWAGE	0.38	0.48	0.35	0.24
	(0.49)	(0.50)	(0.48)	(0.43)
Total (000s)	716	80	788	204
N, sample size	296	36	311	102

[a] Means and standard deviations represent the population estimates where each response is weighted by the respondent's sampling weight.

As a way to incorporate the second issue, we include a squared term of SDUR in equations (21) and (22).[1] The estimated results by sex are reported in Appendix Table 2A.3.

As shown in the table, we were not successful in isolating the determinants for the conditional logit estimations for $\ln(p_2/p_1)$ or $\ln(p_3/p_1)$ for either sex. A comment is in order. Although the coefficients of SDUR and the square term of SDUR were statistically insignificant, the signs on the coefficients were consistent with our earlier findings: that is, the negative sign on the square term of SDUR implies that the likelihood of receiving lower SWAGE than RWAGE (thus, unluckier) would decline as the search period increases. This finding is, in some sense, contradictory to the argument that long term unemployed persons would take a job at a lower wage. It is also interesting to note that unlike the results of our earlier section, we find a similar pattern for males and females.

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[1] We did not attempt to include this non-linear term in equations (17) to (20) because its inclusion will make the functional forms of the system too complicated to practically solve the system.

Appendix Table 2A.3 Three-Stage Multinomial Logit Estimates for the Probability of Finding a Job Whose SWAGE is Greater than RWAGE by More Than 10 Percent (p_1; SWAGE 1.1 * RWAGE), is About the Same as RWAGE (p_2; SWAGE = 1.1 * RWAGE & SWAGE = 0.9 * RWAGE), and is Less Than RWAGE by More Than 10 Percent (p_3; SWAGE 0.9 * RWAGE), by Sex

(asymptotic t-statistics in parentheses)

Variables	Males		Females	
	$\ln(p_2/p_1)$	$\ln(p_3/p_1)$	$\ln(p_2/p_1)$	$\ln(p_3/p_1)$
Constant	5.8608	0.7501	6.0109	1.0672
	(1.36)	(0.17)	(1.63)	(0.24)
AGE	-0.2190	-0.0614	-0.1513	-0.0993
	(-1.15)	(-0.32)	(-0.95)	(-0.50)
EDUC	-0.0437	-0.0634	-0.0483	0.2139
	(-0.28)	(-0.42)	(-0.37)	(1.25)
AFOT	-0.0004	-0.0086	-0.0066	-0.0342
	(-0.04)	(-0.81)	(-0.62)	(-2.49)
HIGH SCHOOL	-0.2620	-0.7036	0.0973	-0.5622
	(-0.52)	(-1.26)	(0.18)	(-0.86)
FT-COLL	0.4798	0.3604	-0.2074	-0.3708
	(0.73)	(0.54)	(-0.40)	(-0.56)
MARRIED	0.2766	-0.5827	0.4847	-0.0290
	(0.37)	(-0.63)	(1.06)	(-0.05)
SOUTH	-0.8143	-0.4292	-0.1666	-0.3271
	(-2.01)	(-1.04)	(-0.46)	(-0.73)
MILITARY	-1.3092	0.3839	-1.4852	1.4099
	(-1.11)	(0.47)	(-1.20)	(1.49)
LIPH	0.3916	0.7312	0.3866	1.0780
	(0.74)	(1.35)	(1.00)	(2.19)
BLACK	0.6982	0.2614	0.3747	0.7254
	(1.51)	(0.56)	(0.88)	(1.37)
HISPANIC	1.0759	0.0335	-0.4739	0.4009
	(2.10)	(0.06)	(-0.88)	(0.64)
UI	-0.1101	-0.1701	0.8348	0.6522
	(-0.14)	(-0.23)	(1.26)	(0.77)
PREWORK	0.0596	0.0493	0.3662	0.0846
	(0.12)	(0.10)	(1.01)	(0.20)
W-MEAN	-0.3881	0.5474	-0.6452	-0.2928
	(-0.57)	(0.78)	(-0.96)	(-0.37)
W-SD	-0.3877	-1.3010	-0.4529	-0.5371
	(-0.34)	(-1.06)	(-0.99)	(-0.91)
UDUR	-0.1510	-0.1624	-0.0012	-0.1827
	(-0.74)	(-0.79)	(-0.01)	(-0.83)
SDUR	0.3463	0.6428	0.3468	0.9189
	(0.52)	(0.93)	(0.65)	(1.26)
SDUR ** 2	-0.1675	-0.1752	-0.1852	-0.3037
	(-0.75)	(-0.78)	(-1.01)	(-1.28)
Log likelihood	-211.79		-225.78	
Chi-squared (38)	46.62		77.96	
Pseudo R^2	0.0992		0.1472	

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CHAPTER 3

THE EFFECTIVENESS OF JOB SEARCH AND JOB FINDING METHODS OF YOUNG AMERICANS

by

John B. Wielgosz and Susan Carpenter*

I. INTRODUCTION

Economists have long realized that a number of imperfections hinder the efficient operation of the labor market. One potentially very significant imperfection is inadequate labor market information which affects the methods job seekers use to locate work. Inefficient or ineffective job search can lead to an increase in search time, frictional unemployment and a less efficient deployment of labor.

Job search methods are usually classified into two broad categories--formal and informal. Formal methods include searching through public or state employment services, private employment agencies, school placement offices, labor union hiring halls and newspaper advertisements while informal methods include direct application to employers on the off chance that a job vacancy exists and contacting relatives and friends about possible job openings. Although in practice the distinction between these two categories is blurred, it is generally held that formal methods make greater use of extensive and quantitative information and informal methods are more associated with intensive and qualitative information flows. This subjective nature and the apparent hit and miss character of informal channels has provided the conventional justification for government involvement in the labor market through, for example, the state employment services. Despite the plethora of theoretical and empirical research on job search and job finding methods carried out over the last two to three decades, there is little concensus about which method should be encouraged or the relative effectiveness of the different methods. This lack of concensus is clearly evidenced by the following two statements, taken from two separate and reputable studies:

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> "This 'individualistic' approach to job seeking (using personal contacts, by relying on newspaper advertisements, and by other more fortuitous means) entails two obvious disadvantages: the period of frictional unemployment tends to be longer than it would otherwise be; and there is little assurance that deployment is carried out with maximum efficiency."[1]
>
> "Smaller proportions (blacks and other labor market disadvantaged groups) applied directly to employer or answered local newspaper ads; methods which have relatively high effectiveness rates. (These groups) should be encouraged to use these two methods to a greater extent..."[2]

The theoretical job search literature has not, indeed, been seriously concerned with assessing the relative effectiveness of the different methods. The general objective of the theoretical literature has been to contribute to a general equilibrium theory for the labor market by explaining workers' actions at a high level of abstraction. The main thrust of the theoretical work has been towards explaining the duration of unemployment by focusing on the costs of search, the distribution of job offers and the reservation wage of jobseekers. (See for example, Barron, 1975; Gronau, 1972; Kohn and Shavell, 1974; and Lippman and McCall, 1976.) In essence job search theory is based on the notion of maximizing behavior which, in its simplest form, postulates that the jobseeker will continue to search for offers until an offer yields a wage which is equal or greater than the reservation wage. However, despite the increased theoretical and mathematical sophistication of job search models, taking into account all sorts of pecuniary and non-pecuniary costs and returns to search, unemployment insurance, variable reservation wages, etc., no reference has yet been made to the method(s) of search used by the job seeker. Indeed job search theory implicitly assumes that search is a homogeneous concept and that there is no difference in respect to either costs or returns between the different methods.[3] The empirical research on the other hand has been concerned with the alternative methods of search and job finding. However, with few exceptions, the thrust of the empirical research has been towards answering the question, how do job seekers search for and find work, rather than with the question of relative effectiveness. Over the past two decades there have been approximately 30 major studies and countless smaller studies covering specific subgroups of the population which have collected and presented evidence on the techniques used by jobseekers to search for and locate work. Although these studies differ in respect to timing, location, sample size, jobseeker characteristics and a multitude of other differentiating variables, they have all tended to emphasize the importance of informal channels, suggesting that methods do indeed differ either in respect to costs or returns or some combination of the two. For a detailed description of the empirical literature, see Mangum, 1982.

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[1] Manpower Policy in the United Kingdom, Organization for Economic Co-operation and Development, (Paris 1970), page 163.

[2] Jobseeking Methods Used by American Workers, U.S. Department of Labor, (Bureau of Labor Statistics, 1975). Bulletin 1886, page 2.

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[3] For a more detailed discussion of job search theory see in particular--S.A. Lippman and J. McCall, 'The Economics of Job Search: A Survey,' Parts 1 and 2, Economic Inquiry, Vol. 14 (1976); and S.I. Mangum, 'Job Search: A Review of the Literature,' Office of Research and Development, Employment and Training Administration, (U.S. Department of Labor), February 1982.

Unfortunately the studies which have examined effectiveness have produced mixed results which are limited in application. This uncertainty arises from a number of factors. In some cases the restricted nature of the sample has limited the applicability of the findings. The study by Reid, for example, was confined to unemployed redundant jobseekers in a particular location (Reid, 1972). Other studies have adopted very narrow definitions of effectiveness, for example, the relative success rate associated with particular methods.[4] Furthermore, most studies did not adequately control for the variety of personal and labor market characteristics of the sample under examination.

The general objective of this chapter is to examine the relative effectiveness of job search and job finding methods of young American jobseekers, in a way which overcomes many of the limitations of previous empirical studies. This labor market group was selected partly because of the nature of the job search data available but more importantly because of the labor market facing this group. The youth labor market has long been recognized as posing very serious and in many respects unique problems. Not only are unemployment rates among the young significantly higher than those among older age groups, but also this group faces critical career choices, often with very little prior exposure to the labor market.

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[4] See for example--Job Seeking Methods Used by American Workers, U.S. Department of Labor, (Bureau of Labor Statistics, 1975), Bulletin 1886. Also, Recruitment, Job Search and the United States Employment Service, R & D Monograph 43, U.S. Department Labor, Employment and Training Administration, (1976).

II. EFFECTIVENESS AND EFFICIENCY

This chapter is concerned with the relative effectiveness of job search methods rather than relative efficiency. The two concepts are not the same and it is probably the efficiency aspect which is more important in the longer run. However, to assess the relative efficiency of job search methods it would be necessary to estimate the rate of return on each method as well as the overall effectiveness of particular methods in achieving the desired reallocation of the labor force in a micro and a macroeconomic sense. This estimate would require measuring the intensity of search and the total costs and payoffs at the individual and aggregate level--both pecuniary and non-pecuniary--associated with each method used. Unfortunately, because such information is not available in practice, empirical research has tended to concentrate on the relative effectiveness of job search methods. This study is no exception in that respect. It differs from previous studies, however, in that it uses broader criteria of effectiveness and attempts to control for a variety of personal and labor market characteristics which might impinge on the relative performance of different methods.

Previous studies have generally found that the informal channels are not only more extensively used by jobseekers but are also more effective, e.g., Mangum, 1982; Stevens, 1978. Almost invariably, effectiveness has been measured in one of two ways: either a ratio is estimated between the number of jobseekers who obtain jobs by the method and the number who mentioned using that method, or a ratio is estimated between the number who obtain jobs by the method and the number who used the method most. The first ratio has been more commonly used, mainly because of the nature of the data available. Both methods produce a simple measure of effectiveness which can be best described as a relative success rate. The difference in findings has been fairly minor. All recent major studies of which we are aware have placed the main informal methods towards the top end of the range of effectiveness and the main formal channel, the state employment service, towards the bottom end of the range.[5] The Bureau of Labor Statistics study, for example, ranked the two main informal channels 'friends and relatives' and 'direct application' the first and second most successful methods respectively, and approximately 3-5 times more effective than the state employment service. Other major studies have broadly confirmed these findings, although some have found 'direct application' to be the most effective method. These findings have provided the basis for the conclusion in recent years that informal channels are more effective and that minority groups would benefit in the labor market if they had better access to effective informal information channels.

Despite this concensus, there are a number of problems associated with forming any conclusions about method effectiveness or using such results for deriving any labor market policies.

In general terms the measures referred to above provide some insight into relative usage and success rates. They provide very little information, however, about effectiveness in a broader sense, which would require among other things information about the duration of job search, the costs associated with producing acceptable job offers, and the returns accruing to individual methods.[6] It is conceivable that the most successful methods are also the most costly in the sense that they are associated with longer periods of job search or require a much larger number of contacts to produce an acceptable job offer. At least one study has suggested that 'own search' time and 'outside intermediation' are substitutes in the job-seeking process (Stevens, 1978). That is, the smaller the input of outside intermediation the greater the number of contacts the jobseeker needs to make to secure an acceptable job offer. The evidence on methods of search and duration of search and returns to search is mixed (Reid, 1972; see also Rungeling, Smith and Scott, 1976). Several other problems limit the value of most available job search statistics. First, most available job search statistics refer to unemployed jobseekers only, and although this group of seekers is very important, the evidence suggests nearly as many of the employed seek jobs as do the unemployed. Methods which may be successful or effective for one group may not be for the other. Furthermore, the unemployed are not a homogeneous group. Clearly some have considerable labor market exposure with a network of information flows about the labor market, while others, particularly the young school leavers, may have almost no knowledge of the labor market. Second, simple statistics on job search do not convey any information about the intensity of job search. The knowledge that a job seeker has used a particular method of search tells one little about actual search behavior: jobseekers using the 'friends and relatives' network may have made one job inquiry or have made thousands. Even the number of contacts made may not be all that meaningful if those contacts are wide and casual.[7] Third, it is often difficult to compare search methods because the seeker may change the method over time.[8] Only one method is, however, credited with success, and intermediate methods may either be ignored or forgotten. Furthermore, in the absence of information about duration of search, standard success rates are of dubious value in ascertaining effectiveness.

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[5] See footnote 4 above and Mangum, 1982.

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[6] There are two points which should be made at this stage. First, although duration of job search and unemployment are frequently treated as synonomous, the two concepts are in fact different. Search may well take place after a considerable period of unemployment while many jobseekers undertake search whilst still on the job. Second, one could argue that reduced search time is not necessarily compatible with economic efficiency. Reduced search time may result in a certain degree of mismatching of job and seeker which may in the longer term lead to increased job dissatisfaction. This chapter does not address these particular issues.

The fourth main problem is not specifically related to the standard measures of effectiveness but is a common problem with all existing studies of effectiveness. Without exception empirical studies have focused on the supply side characteristics of the jobseeker. Demand side considerations are generally excluded. Ideally any assessment of effectiveness should consider the methods of searching for and finding work by jobseekers with very similar supply and demand characteristics. Methods successful in some occupations, industries, and geographic areas may be unsuccessful in others. These differences may not be due to a method being more or less effective but because the types of vacancies constrain the methods of search, either in a general sense or because employers choose to use specific methods during periods of high or low economic activity. For example, it is generally recognized that the state employment service tends to attract vacancies from the lower end of the skill range. The service is therefore likely to be constrained by the vacancies at its disposal. Furthermore, it is perhaps not surprising that jobseekers looking for relatively skilled jobs ought to use those methods which are likely to attract the higher skilled/better quality vacancies.

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[7] There is a particular problem here with assessing the effectiveness of the 'state employment service.' Legislative requirements often require unemployed jobseekers to register with the employment service in order to qualify for unemployment benefits. Beyond that requirement the seeker may make little active use of the employment service thereby overstating actual usage of the employment service.

[8] The B.L.S. Survey (see Bradshaw, 1973) found that jobseekers on average used four different methods of job search whilst the NLS 1982 survey reveals that nearly 60 percent of youth used more than one method of search.

The final problem relates to the basic methodology used by nearly all studies of search effectiveness. Most of the empirical research is based on simple cross tabular analysis.[9] Such analysis does not enable us to acertain the effect of particular characteristics, for example, sex, on job seeking behavior, net of other differences associated with that characteristic, for example, occupation or the type of employment sought. Apparent differences in effectiveness rates may be a function of the particular characteristics of the groups examined, so controlling for such differences is obviously important. One option is to examine individuals with identical supply and demand characteristics. Another is to use some form of multivariate regression analysis controlling for characteristics potentially important in the job search process.

This study attempts to overcome many of these problems. Multivariate regression analysis is used to control for a wide variety of individual and job characteristics. The simple success rate is replaced by two separate criteria of effectiveness: (1) the duration of job search, and (2) the level of job satisfaction. The latter criterion is used in preference to earnings differentials in an effort to capture both tangible and non-tangible returns to the job found. In addition, we also examined whether the method of search has any significant impact on the number of job offers received, and these results are presented in the appendix. Certain problems, however, still remain. For example, the cost of search is still almost completely ignored. The information is simply not available (and even if it were it might be of dubious value).[10] Such problems which continue to exist, unfortunately, must be treated as limitations or caveats to be applied to our conclusions.

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[9] An exception to this is the study by Rungeling, Smith and Scott, (1976). This study is, however, very limited in scope.

III. THE DATA

The data for this study was derived mainly from the 1982 National Longitudinal Survey of Youth Labor Market Experience (NLS). This particular survey sampled 12,124 young people age 16-25, representing nearly 35 million youth born during the period 1957 through 1964. The 1982 survey, in addition to obtaining information on job search methods used, also obtained information on the duration of job search, the number and nature of job offers rejected, the successful method of locating work and other aspects useful in assessing the effectiveness of job search methods. Information was also collected on a wide variety of jobseeker characteristics, including the respondent's reservation wage, and the nature of the job sought and ultimately found.

To ascertain whether there is any significant difference between the NLS sample and other studies in respect to the pattern of job search, effectiveness of methods, etc., information was collected and tabulated on job search and job finding patterns of youth, and comparable effectiveness rates were computed for each method used. A selection of these rates is presented in Table 3.1 below.[11]

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[10] There are numerous problems associated with measuring the costs of search. See J. McCall, 'The Job Search,' in a paper presented for 'A Research Agenda for the National Longitudinal Surveys of Labor Market Experience,' Social Science Research Council, (October 1977) and the subsequent discussion of the paper.

The results presented in Table 3.1 confirm what is already widely known about job search and job finding methods. Although there are evident differences by specific subgroups, clearly the most successful methods are the two informal ones, 'friends and relatives' and 'direct applications.' With the exception of the 'other' method, which accounts for only a very small proportion of job seeking/finding activity, these informal methods appear to be approximately twice as effective or successful as the next best methods, and between 3-5 times more successful than the formal channels, the 'state employment service' and 'private employment agencies.'

A common problem with many labor market studies is that the individual characteristics themselves change over time. As such it may be misleading to focus attention on current characteristics in order to explain current behavior. This is likely to be the case with variables such as labor force status, education, age, the reservation wage, exposure to government training programs and so on. The current variable may not be the relevant variable during the period of search. To overcome this problem, jobseeker status at

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[11] Effectiveness rates were also computed for the major occupation and industry groups and a variety of other subgroups of the labor market. There is little point in presenting all of the results here, as the information is generally very similar to the findings of other major studies, both in terms of ranking and overall rates. This was also true when we examined the data on job search and job finding patterns from the 1982 Youth Cohort Survey. Not unexpectedly, given the timing of the survey and the age profile of of respondents, precise comparisons are difficult and minor differences are inevitable. In a general sense, however, the picture was consistant with other major studies' findings.

Table 3.1 Effectiveness of Job Search Methods by Selected Jobseeker Characteristics[a] - 1982

Method	State employ. service	Private employ agency	Friends and relatives	Newspapers	Civil service test	Contact some cbo. office	School placement office	Asked teachers and profs.	Applied direct to employ	Labor union hiring hall	Other
Characteristic											
Age											
16-19	13.9	14.7	57.8	28.1	28.1	7.4	19.4	7.6	63.7	-	40.5
20-21	17.8	19.1	58.0	28.0	27.4	10.9	39.0	6.1	63.9	14.7	63.1
22-25	13.0	19.1	53.6	32.8	34.3	25.7	30.5	16.6	63.4	11.1	65.8
Race											
White	13.9	17.7	55.3	31.4	33.4	14.8	31.0	14.0	63.9	12.2	60.5
Black	15.2	16.9	56.4	24.7	25.7	23.7	23.5	6.9	59.9	-	73.5
Hispanic	18.2	33.5	57.6	35.1	33.4	26.0	36.2	15.9	64.3	46.7	73.2
Sex											
Male	13.4	11.4	59.8	23.9	22.1	23.0	42.8	11.7	63.1	12.5	60.7
Female	15.5	24.2	50.7	36.6	43.6	12.1	20.5	15.0	64.1	-	64.3
Labor force status											
Unemployed	14.5	18.8	51.4	28.3	17.6	17.2	26.8	11.1	61.7	7.1	59.3
Employed	14.1	17.7	62.8	36.5	52.0	25.2	39.7	19.8	67.2	21.5	65.3
Total	14.4	18.5	55.5	30.9	32.1	18.3	30.5	13.5	63.6	11.9	62.4

[a] The effectiveness rates presented above are analagous to the first method outlined above, i.e., the percentage corresponding to the number of jobseekers who obtain jobs by the method and the number who mentioned using that method. CBO refers to community based organizations such as the Urban League, etc.

the time job search commenced was used, information that was readily obtainable from earlier NLS surveys.

Clearly not all of the 1982 respondents could be used here. Of the 12,124 people who were interviewed, approximately 55 percent (6,825) could be considered for this study. The remainder were either still in school or were not in the labor force, were not looking for work when they were offered their current job, or had not worked over the preceding 12-month period. The usable sample was further reduced when we excluded those people who were self-employed or in a family business, those in military service, those currently unemployed and those for whom a complete set of responses could not be assembled. Those currently unemployed were excluded either because they held no previous job and could therefore provide no information on the successful method of job search or because if they were previously employed they were less likely than the currently employed to recall relevant job search and job finding information accurately. The final sample consisted of all those people who at the time of the survey held a permanent job (with the exceptions mentioned above), who indicated that they were searching for work prior to finding their current job, and for whom all relevant information could be assembled. The number of respondents used in the subsequent analysis varied from approximately 1,800 to 3,000 depending on whether jobseeker characteristics were specified in terms of pre-job search status or current status. The latter specification was used in assessing the possible effects of job finding methods on the level of job satisfaction. Finally, to overcome the problem of non-homogeneous labor market groups and the possibility that search method effectiveness may vary according to the labor market group examined, our sample was broken up into three separate subsamples--those who were employed during the search period (32 percent), those who were unemployed but had labor market experience (45 percent), and those who were essentially new entrants into the labor market (24 percent). The latter consisted predominantly of school leavers. Each subsample or group was examined separately in the analysis which follows.

One potentially very important problem in using a subsample from any sample is that certain important characteristics and population attributes may become distorted or lost in the secondary selection process, no matter how representative or accurate the initial survey. To examine whether this was the case with our sample of respondents, frequency distributions of a number of major characteristics and parameters were constructed and the results compared with earlier NLS survey results, the 1982 survey results for the population as a whole, and comparable Current Population Survey (CPS) information.[12] Although some difference was expected, there were no major differences. The general profile of the subsample--in terms of all major characteristics examined, including the occupation and industry profile, the methods of search used, the successful methods of finding work, the percentage of respondents using multiple search methods, etc. --was remarkably similar to the overall 1982 youth survey results and earlier youth survey results.

The variable which did, however, cause some concern was the average duration of job search, which was considerably less than the average duration of unemployment as estimated by the CPS. On the basis of our subsample of respondents, the average duration of job search was estimated as approximately 4-8 weeks, being at the lower end of the range for the employed jobseeker and at the upper end for the unemployed jobseeker. Although this is very similar to earlier NLS estimates it is considerably less than the CPS estimate of mean duration of unemployment of approximately 16 weeks for 1982.[13] Given the nature of our data, however, a substantial difference is to be expected. Search time and unemployment are not the same and search often takes place after a period of discouragement and joblessness has been experienced. More important, however, is the fact that our sample includes only those who currently hold a job, i.e., those who were successful in finding work, while the CPS estimate includes also those who were unsuccessful, including those with very long durations of unemployment. This point is clearly evident if one compares the CPS average and median duration of unemployment. The latter is approximately one-half that of the former.

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[12] The Current Population Survey (CPS) data used for comparison here was obtained from the Monthly Labor Review, U.S. Department of Labor, Bureau of Labor Statistics (various issues) and Employment and Earnings, U.S. Department of Labor, Bureau of Labor Statistics (various issues).

In general, therefore, the sample group used for this study revealed all of the major characteristics and attributes of the youth labor market as evident in the major surveys, not only with respect to individual characteristics, occupation and industry profiles, but in terms of their methods of search and finding work. For example, the BLS survey estimated that for the 16-20 age group, approximately 64 percent applied directly to employers and 27 percent made use of the state employment service. Our estimate varied by less than 10 percent in each case, while the overall ranking of all methods was almost identical. We would therefore argue that the findings of this study have a more general applicability than the size of the subsample might suggest.

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[13] Monthly Labor Review, U.S. Department of Labor, (Bureau of Labor Statistics), (February 1983), Table 7.

IV. THE STATISTICAL ANALYSIS

To overcome the limitations associated with simple cross tabular analysis, multivariate regression analysis was used to determine whether different methods of job search had a statistically significant impact on the duration of search when a number of the variables likely to influence method effectiveness are controlled. The duration of job search (duration) can be ascertained directly from the 1982 survey. Because this variable can be specified as a continuous variable, and because Hispanics, blacks, and poor non-Hispanic, non-black youth in the sample are over-represented, weighted ordinary least squares analysis was used to estimate the parameters of the equations. In addition, probit equations were estimated to see whether alternative methods of finding work (again controlling for a number of relevant variables) exert an independent and significant influence on the level of job satisfaction.[14] Job satisfaction was deemed the most appropriate variable for assessing whether particular methods of finding work lead to a more efficient deployment of labor because satisfaction encompasses both monetary and non-monetary considerations. We would argue that alternative criteria such as earnings differentials and employment stability are too limited because they either focus exclusively on monetary returns or they may be significantly determined by external economic conditions. The level of job satisfaction was specified as a dichotomous variable taking the value 1 if the respondent indicated that he/she was 'very satisfied' with the current job and

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[14] The 1982 survey includes a number of job satisfaction questions ranging from a simple single global job satisfaction question to a question based on a complex 10 item job satisfaction scale. Since the evidence suggests that the mean of the single global question is essentially identical to the mean of the complex scale, it would appear to matter very little which information is used. See Borus, 1981 page 140. For the purposes of this study it was decided to use the simple single question.

0 otherwise. The percentage who responded that they were very satisfied with their existing job was approximately 36 percent, only marginally more than the 34 percent who responded in a similar way in the total 1979 NLS youth survey.

The independent variables included in the 'duration' equations encompassed a number of variables likely to influence search method effectiveness. These include age, sex, race, marital status, educational attainment, type of work sought (whether part-time or full-time), exposure to government training programs and the broad occupation and industry classification of the jobseeker. The latter was specified as a system of dummy variables and was included partly to control for relative supply and demand conditions facing particular occupations and industries and partly in recognition of the fact that certain search methods may be constrained by the type of job vacancies available. The search variables too were specified as a system of dummy variables with the 'predominant method of search' being allocated the value 1 and all other methods having a value of 0. All coefficients were estimated with reference to the 'state employment service.'[15] In addition, we also included as independent variables the state unemployment rate (to capture the influence of general demand constraints and thus the opportunity cost of prolonging search), whether single or multiple search methods were used, the distance travelled to search for work (a proxy for extent of the labor market), and the jobseeker's stated reservation wage. The latter variable is included since job search theory postulates an individual supplier of labor formulates a reservation or minimum acceptance wage which determines which job offers are to be rejected and hence the duration of job search. One other point should be made about variable specification. Where the characteristic, status of the individual, or other variable such as unemployment rate was susceptible to possible change over time, the variable at the time search commenced was the one used. This specification involved working backwards and extracting the appropriate information from earlier surveys.

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[15] Information is collected on eleven different methods of search. Each separate method is included in this analysis. An alternative would have been to group the various methods into either formal or informal categories. The former approach was deemed preferable. In the first instance respondents were asked to indicate which methods of search they had used and subsequently the predominant method of search used. The first question enabled us to ascertain which respondents used multiple search methods while the subsequent question provided the necessary information for the search variables in the search and offers equations.

The independent variables in the 'job satisfaction' equations were specified in essentially the same way as for the 'durations' equations. There were, however, a number of differences. First, the type of work sought was replaced by actual hours of work and the individual's reservation wage was replaced by current earnings.[16] Second, the number of employer contacts made by the jobseeker and the duration of search were included as additional independent variables to ascertain whether jobseekers who search for a longer period of time and make a greater number of employer contacts obtain jobs that produce a greater level of job satisfaction. Third, in looking at job satisfaction, the appropriate variable is the method of finding work rather than the method of search. As such the latter variable was replaced by the former. Again the coefficients are estimated relative to the state employment service. Finally, since the issue of timing is not particularly important in the job satisfaction equations, all variables are expressed in terms of current period status.

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[16] There is a possible problem of endogeniety associated with these and other variables in that these variables themselves may be determined by the search method. To test for this possible problem, separate equations were estimated with these variables ommitted. However, this made little difference to either the coefficients or significance levels of the other variables in the equations. As such, it was decided to include these variables in the equations presented here.

Separate equations were estimated for each of the separate labor market groups identified and the results are presented in Tables 3.2 and 3.3.

V. THE FINDINGS

Duration of Job Search

As expected, sufficient differences appeared in the results for the three separate labor market groups to cast considerable doubt on the findings of studies which treat all groups as homogeneous. Quite apart from the substantial difference in the duration of job search, important differences also appeared with respect to individual variables and coefficients. For example, labor unions as a method of job search have significant but opposite effects for employed and unemployed jobseekers. There are many possible reasons for this difference, one being that construction union hiring halls cater to union members based on seniority. However, this method accounts for only a very small percentage of overall job search activity.

The main findings relate to the different methods of job search and the duration of search. Contrary to the widely held view that the state employment service reduces the period of frictional/search unemployment and the findings of a number of studies suggesting no significant difference in duration of seach between various search methods and duration of search, (Reid, 1972; Rungeling, Smith and Scott, 1976) our findings presented in Table 3.2 show that almost all methods of job search are associated with significantly shorter durations of search when compared with the state employment service. This finding is broadly evident for the three separate

Table 3.2 Multiple Regression Estimates for Duration of Job Search[a]

(t-values in parentheses)

Independent variables	Employed during search	Unemployed but with labor market experience	Unemployed new entrants
Age	0.01	-0.03	-0.01
	(0.17)	(-1.57)	(-0.32)
Sex			
Female	-	-	-
Male	0.12	0.16	0.23
	(1.23)	(1.90)*	(1.95)*
Race			
White	-	-	-
Black	0.12	0.45	0.32
	(0.82)	(4.38)**	(2.07)*
Hispanic	-0.16	-0.11	-0.09
	(-0.94)	(-0.83)	(-0.40)
Marital status			
Never married	-	-	-
Married	-0.16	-0.17	0.27
	(-1.48)	(-1.98)*	(1.53)
Other	-0.40	0.22	-0.52
	(-2.02)*	(1.33)	(-1.05)
Educational attainment			
High school completed	-	-	-
High school dropout	0.08	-0.06	0.12
	(0.54)	(-0.67)	(0.66)
Post high school education	0.04	-0.18	-0.15
	(0.37)	(-2.11)*	(-1.02)
Work sought			
Part-time	-	-	-
Full-time	0.07	-0.01	-0.18
	(-0.38)	(-0.02)	(-1.22)
Exposure to govt. training programs	-0.28	0.01	0.21
	(-2.21)*	(0.07)	(1.48)
Occupation			
Skilled white collar	-	-	-
Sales	0.04	0.01	-0.30
	(0.22)	(0.22)	(-1.35)
Clerical	0.01	0.10	-0.12
	(0.05)	(0.83)	(-0.76)
Craftsmen	0.09	0.31	-0.93
	(0.53)	(1.91)*	(-3.67)**
Operatives (inc. transport)	0.18	0.37	-0.61
	(1.00)	(2.47)*	(-2.92)**

Table 3.2 (Cont.)

Independent variables	Employed during search	Unemployed but with labor market experience	Unemployed new entrants
Laborers (inc.	0.14	0.16	-0.93
farm laborers)	(0.62)	(0.93)	(-3.58)**
Service (inc.	-0.12	0.07	-0.56
private household)	(-0.78)	(0.55)	(-3.01)**
Industry			
Manufacturing	-	-	-
Primary (inc. mining)	-0.03	0.44	0.62
	(-0.15)	(1.98)*	(2.12)*
Construction	0.06	-0.13	0.02
	(0.27)	(-0.75)	(0.05)
Transport	0.24	0.13	0.15
	(1.19)	(0.67)	(0.55)
Trade	-0.12	0.06	0.29
(wholesale & retail)	(-0.87)	(0.52)	(1.81)*
Professional and	0.15	0.28	-0.15
public administration	(1.04)	(2.23)*	(-0.92)
Other industries (finance,	0.15	0.25	0.01
entertainment, etc.)	(1.06)	(2.07)*	(0.05)
State unemployment rate	0.03	0.02	0.05
	(1.78)*	(1.71)*	(2.29)*
Use of multiple	-0.68	-0.65	-0.67
search methods	(-8.09)**	(-8.59)**	(-5.91)**
Distance travelled	0.01	0.01	0.01
to search for work	(2.18)*	(3.06)**	(2.84)**
Reservation wage	0.0001	0.0001	0.0001
	(0.86)	(0.87)	(0.35)
Predominant method of search			
State employment service	-	-	-
Private employment service	-0.43	-0.14	-0.84
	(-1.59)	(-0.77)	(-2.68)**
Asked friends/relatives	-0.41	-0.27	-0.92
	(-1.98)*	(-1.94)*	(-4.31)**
Placed/answered	-0.36	-0.41	-0.82
newspaper advertisements	(-1.73)*	(-3.05)**	(-3.77)**
Civil service test	-0.04	-0.47	-0.25
	(-0.10)	(-0.85)	(-0.39)
Contacted CBO	0.38	-0.59	-0.49
	(0.69)	(-0.93)	(-0.76)
Contacted SPO	-0.14	0.22	-0.82
	(-0.54)	(0.97)	(-3.08)**
Asked teachers, profs., etc.	-0.43	-0.97	-1.12
	(-1.22)	(-1.55)	(-3.13)**

Table 3.2 (Cont.)

Independent variables	Employed during search	Unemployed but with labor market experience	Unemployed new entrants
Checked labor unions	1.99	-1.25	-
	(2.96)**	(-2.74)**	
Applied directly to employers	-0.69	-0.31	-0.83
	(-3.35)**	(-2.41)*	(-4.05)**
Used other methods	-0.37	-0.54	-0.66
	(-1.12)	(-1.71)*	(-1.38)
Intercept	1.72	2.04	2.66
	(2.77)**	(4.01)**	(3.31)**
Number of respondents	578	833	438
R^2 adjusted	0.21	0.18	0.22
F ratio	5.24	6.15	4.51

**Significant at 1 percent level.

* Significant at 10 percent level.

[a]Duration of search is in weeks and is expressed in log form.

groups but is particularly evident for the new entrant group. For this group information provided by 'teachers and professors' and 'friends and relatives' had the greatest impact on duration. Private employment agencies and direct application to employers came next, having an almost identical impact on duration. They were followed by 'newspapers' and the 'school placement office.' There was, however, no statistically significant difference between the state employment service, civil service tests and the use of community-based organizations such as Urban League, etc. Although the effects were less pronounced for the other two groups, the general picture was basically the same. In all cases the main informal channels--friends and relatives and direct application--were associated with significantly shorter durations of search. Precisely why the state employment service is associated with a significantly longer duration of search is not ascertainable from the evidence available. Other research has indicated that individuals seeking employment use informal job search methods first and then turn to formal methods such as employment services. This obviously would lead to longer duration of unemployment for those observed to have used formal methods. Moreover, the most employable individuals do not need to turn to employment services. Alternatively it may be that other methods are simply more effective in conveying the necessary job information at a lower cost.

A number of other important points can be made on the basis of the information contained in Table 3.2.

(i) Individuals who used multiple job search methods had considerably shorter duration of job search than those who relied on one method only. The use of multiple search methods for all three groups significantly reduced the duration of job search and, interestingly, the magnitude of effect is approximately the same for all three groups. The fact that this variable is highly significant suggests that it has an independent influence on duration of search over and above the influence of any individual method of search. It is likely that this variable is a reasonable proxy for intensity of job search.

(ii) Arguments that youth have unrealistically high reservation wages that lead to prolonged periods of search are not substantiated by the evidence here. Although the influence is positive, it is extremely small and statistically insignificant. On the other hand, the demand for labor (as measured by the state unemployment rate) was positively and significantly associated with duration of search. Its influence was particularly pronounced for the new entrant group. However, although significant, the influence of this variable was considerably less than either the method of search or the occupation of the jobseeker.

(iii) The occupation variables are generally consistent with expectations in that the duration of search associated with semi-skilled and unskilled occupations is usually longer than for skilled occupations. However, this pattern does not hold for new entrants in the skilled white collar occupation group who have a significantly longer duration of search. Again the reasons for this difference are not clear although it probably reflects a wider area of search because of important career choices and the large investment in education.

(iv) Individual jobseeker characteristics provide a variety of results. Generally their influence is considerably less than the method of search, the use of multiple search methods, and occupation. In terms of sex and race, males and blacks experience significantly longer durations of search but only among the unemployed and new entrants, not among those already employed. This difference adds another dimension to the already significant labor market problem facing black youth, and supports to some extent the view that an important problem faced by this group may be the lack of effective job search channels (Rees, 1966; Mangum, 1982). Exposure to government training programs does not appear to be the solution, because for both the unemployed and new entrant group this variable was associated with increased duration of search although the influence was insignificant. Other variables behaved in accord with a priori expectations although important differences appeared between labor market groups.

It seems that duration of search and the method of search are significantly related providing some justification for the extensive use of the informal channels. In terms of this criterion just about all methods of search perform better than the state employment service while multiple search method users appear to have a further advantage in terms of reduced search time.

Level of Job Satisfaction

A widely held view in recent years is that informal channels of job search enable a more efficient deployment of labor because of the intensive and qualitative information they convey. This argument has been espoused on numerous occasions and has now become the basic explanation for the extensive use of informal channels of search and recruitment (see U.S. Department of Labor, 1975). The limited evidence available has provided some support for this argument although it is hardly conclusive.

Our findings about job satisfaction, presented in Table 3.3, do not support the view that informal channels convey a particular type of information which produces greater job satisfaction. The method of finding work appears to exert little influence on job satisfaction, regardless of the labor market group under examination. Indeed the only method which attained

Table 3.3 Probit Estimates for Job Satisfaction Equations

(t-values are in parentheses)

Independent variables	Employed during search	Unemployed but with labor market experience	Unemployed new entrants
Age	-0.04	-0.05	-0.04
	(-1.50)	(-2.09)*	(-1.32)
Sex			
Male	-0.22	-0.18	0.03
	(-2.16)*	(-1.79)*	(0.02)
Race			
White	-	-	-
Black	-0.12	-0.53	0.03
	(-0.98)	(-0.49)	(0.23)
Hispanic	0.03	-0.03	0.26
	(0.25)	(-0.26)	(1.82)*
Marital status			
Never married	-	-	-
Married	0.02	0.14	-0.12
	(0.23)	(1.52)	(-0.01)
Other	0.16	-0.05	-0.16
	(0.92)	(-0.36)	(-0.68)
Educational attainment			
High school completed	-	-	-
High school dropout	0.20	0.05	0.10
	(1.39)	(0.54)	(0.59)
Post high school education	-0.03	-0.10	-0.10
	(-0.27)	(-0.83)	(-0.79)
Hours of work			
Part-time	-	-	-
Full-time	0.21	0.23	0.01
	(1.44)	(2.23)*	(0.09)
Exposure to govt. training programs	-0.17	0.12	0.11
	(-1.32)	(1.19)	(0.80)
Occupation			
Skilled white collar	-	-	-
Sales	0.07	-0.38	-0.10
	(0.30)	(-1.48)	(-0.40)
Clerical	-0.41	-0.07	0.01
	(-3.01)**	(-0.46)	(0.07)
Craftsmen	-0.27	-0.05	0.05
	(1.		
		*	(-2.66)**
Laborers (inc. farm laborers)	-0.44	-0.39	-0.34
	(-2.00)*	(-1.98)*	(-1.32)

Table 3.3 (Cont.)

Independent variables	Employed during search	Unemployed but with labor market experience	Unemployed new entrants
Service (inc. private household)	-0.33	-0.24	-0.21
	(2.16)*	(-1.47)	(-1.16)
Industry			
Manufacturing	-	-	-
Primary (inc. mining)	0.27	0.14	-0.14
	(1.14)	(0.64)	(-0.43)
Construction	0.36	0.15	-0.01
	(1.51)	(0.80)	(-0.05)
Transport	0.43	0.19	0.06
	(2.32)*	(0.96)	(0.27)
Trade (wholesale and retail)	0.27	0.06	0.01
	(1.87)*	(0.41)	(0.04)
Professional and public administration	0.43	0.34	0.38
	(2.76)**	(2.29)*	(2.41)*
Other industry (inc. finance and entertainment)	0.23	0.05	0.06
	(1.56)	(0.32)	(0.36)
Number of contacts made with employers	-0.00	0.00	-0.00
	(-0.50)	(0.65)	(-1.03)
Period of search	0.02	-0.003	-0.01
	(0.36)	(-0.06)	(-0.30)
Current earnings	0.0001	0.0001	0.0001
	(2.66)**	(2.45)*	(2.42)*
Method of finding work			
State employment service	-	-	-
Private employment service	-0.24	-0.05	-0.49
	(-0.80)	(-0.22)	(-1.48)
Through friends and relatives	-0.05	-0.08	0.10
	(-0.45)	(-0.70)	(0.72)
Newspaper advertisements	0.06	-0.22	0.22
	(0.36)	(-1.44)	(1.16)
Civil service test	-0.23	-0.27	-0.66
	(-0.83)	(-0.68)	(-1.63)
Some CBO	0.25	-0.11	0.30
	(0.38)	(-0.28)	(0.70)
School placement office	-0.17	-0.20	-0.01
	(-0.64)	(-0.49)	(-0.04)
Teachers and profs.	0.66	-0.35	0.65
	(1.52)	(-0.53)	(1.63)
Labor unions	0.17	-0.35	0.34
	(0.19)	(-0.35)	(0.30)
Direct application to employers	-0.03	-0.08	0.15
	(-0.27)	(-0.75)	(1.15)
Other methods	0.61	-0.07	0.07
	(2.13)*	(-0.25)	(0.20)

Table 3.3 (Cont.)

Independent variables	Employed during search	Unemployed but with labor market experience	Unemployed new entrants
Intercept	0.34 (0.57)	0.46 (0.81)	0.19 (0.31)
Number of respondents	1003	1118	803
2 times log likelihood	-646.49	-698.66	-502.02
Chi-squared (35)	72.16	56.11	58.30
Percent responding 'very satisfied' with job	42.07	35.42	37.48

** Significant at 1 percent level

* Significant at 10 percent level

an acceptable level of statistical significance is the 'other' method for the employed group only. It appears that the main variables influencing job satisfaction are the occupation and industry variables. Not surprisingly, job satisfaction is generally associated with the skilled white collar occupation groups and it decreases with the level of skill involved. The only other variable to significantly influence job satisfaction for all three groups is the individual's current earnings--however the degree of influence is very small. Interestingly, neither the duration of search nor the number of employer contacts made exerted any significant influence on job satisfaction.

VI. CONCLUSIONS

The results presented here have potentially very important implications both for job search theory and labor market policy. Job search theory which implicitly assumes that job search is homogeneous and that the duration of search is largely determined by the costs of search and the individual's reservation wage is not supported by the evidence presented in this paper. The method of search used by the jobseeker appears to have a very significant influence on the duration of job search. If methods of search and recruitment vary with changed economic conditions or with certain subgroups of the labor market--as the empirical evidence suggests--then alternative methods of search ought to be explicitly included in the theoretical models.

With reference to labor market policy, the view that government intervention in the labor market through the state employment service can reduce the period of search and the amount of frictional unemployment and enable a more efficient deployment of labor is also not supported by the evidence here. As far as the youth labor market is concerned, it seems that just about any method of search was better than the state employment service in terms of duration of job search, and individuals who used multiple search methods instead of relying on a single one experienced even shorter duration of search. A disturbing feature was that the state employment service performed relatively badly--both with reference to duration of search and the number of job offers received (see appendix 3A)--for the new entrant group, a group very likely to be at a considerable disadvantage in terms of labor market experience and exposure. The reasons for the relatively poor performance of the state employment service are not readily apparent and ought to be the subject of future research. Clearly the state employment service is an important labor market institution and an important channel of job search for many subgroups of the population. If the service is to discharge its functions effectively it needs to attract vacancies. It will have difficulty doing so if the service is widely believed to be ineffective and inefficient. A redeeming point for the service is that we find no significant difference between alternative job finding methods and the resulting level of job satisfaction. Apparently informal methods are widely preferred because they reduce duration of search, not because they provide certain important intensive and qualitative information about the work place and working conditions.

The findings here have emphasized the need for further research in this important area. For a start a closer examination of the state employment service brokerage function is essential. It is important to find out precisely why the service takes significantly longer to place jobseekers. If it is the result of vacancy constraints, what are the reasons for this? Has the service a distinct comparative advantage or disadvantage in placing certain subgroups and filling certain vacancies? It may be that rather than attempting to cater to all groups, the services' activities ought to be confined to particular areas of activity as has often been suggested. Second, more attention ought to be devoted to the demand side and demand constraints in looking at jobseeking behavior. Traditional job search theory (and indeed existing empirical studies) have concentrated on supply side considerations in explaining job seeking behavior. There is sufficient evidence in this study and elsewhere to suggest that demand factors are also important. Finally, we would point out that in many respects our results are preliminary. They tell us little about the actual costs and benefits associated with alternative methods of search and how these costs and benefits vary over time. Nor do they tell us a great deal about the probability of securing employment via alternative methods.

APPENDIX 3A

Here we briefly examine whether the method of search exerts an influence on the number of job offers the jobseeker receives. As with duration of job search, the number of job offers received can be ascertained directly from the 1982 survey. This can be done from the question or number on job offers refused. In the event of 'no refusal,' the respondent is allocated 'one job offer,' while those with a refusal had one added to the number of refusals, thereby creating a continuous series of job offers received. Ordinary least squares analysis can then be used to see whether method of search has a statistically significant impact on the number of job offers received. The independent variables were specified in the same way as for the 'duration' equations. An additional variable - the number of employee contacts made by the job seeker - was included in the 'offers' equation. The results for 'number of offers received' are presented in the Appendix Table 3A.1.

The information presented in the table suggests that alternative methods of search have a very small impact on the number of job offers received. One interesting finding is for the new entrant group, where all methods had a positive impact on offers received when compared with the state employment service. However, only newspapers, school placement office and the 'other' category attained an acceptable level of statistical significance. Indeed, school placement office was positive and significant for the other two labor market groups examined as well.

Not surprisingly, the main group of variables influencing the number of job offers received are the occupation and industry variables. Relative to the main skilled white collar occupations, all other occupation groups had a lower propensity for attracting job offers, and in the majority of cases the results were statistically significant. This significance is broadly

Appendix 3A.1 Multiple Regression Estimates for Number of Job Offers Received During Period of Job Search[a]
(t-values are in parentheses)

Independent variables	Employed during search	Unemployed but with labor market experience	Unemployed new entrants
Age	-0.01	0.01	0.01
	(-0.07)	(1.02)	(0.90)
Sex			
Female	-	-	-
Male	0.07	0.02	-0.07
	(1.41)	(0.48)	(-1.36)
Race			
White	-	-	-
Black	-0.08	-0.04	-0.06
	(-1.10)	(-0.70)	(-0.88)
Hispanic	-0.11	0.04	-0.03
	(-1.22)	(0.57)	(-0.32)
Marital status			
Never married	-	-	-
Married	-0.05	-0.03	0.07
	(-0.94)	(-0.73)	(0.98)
Other	0.06	0.19	-0.03
	(0.62)	(2.25)*	(-0.16)
Educational attainment			
High school completed	-	-	-
High school dropout	-0.07	0.02	-0.03
	(-0.94)	(0.40)	(-0.37)
Post high school education	0.74	0.08	0.07
	(1.47)	(2.00)*	(1.15)
Work sought			
Part-time	-	-	-
Full-time	-0.09	0.06	-0.01
	(-1.03)	(1.05)	(-0.04)
Exposure to govt. training programs	0.14	-0.03	-0.05
	(2.20)*	(-0.71)	(-0.87)
Occupation			
Skilled white collar	-	-	-
Sales	-0.20	-0.16	-0.01
	(-2.17)*	(-1.78)*	(0.14)
Clerical	-0.29	-0.05	-0.35
	(-4.23)**	(-0.86)	(-5.06)**
Craftsmen	-0.29	-0.12	-0.28
	(-3.28)**	(-1.59)	(-2.58)**
Operatives (inc. transport)	-0.23	-0.28	-0.33
	(-2.73)**	(-3.95)**	(-3.70)**
Laborers (inc. farm laborers)	-0.25	-0.21	-0.16
	(-2.23)*	(-2.62)**	(-1.40)
Service (inc. private household)	-0.29	-0.13	-0.14
	(-3.74)**	(-2.16)*	(-1.77)*
Industry			
Manufacturing	-	-	-
Primary (inc. mining)	0.02	0.05	0.25
	(0.19)	(0.51)	(2.08)*

Appendix 3A.1 (Cont.)

Independent variables	Employed during search	Unemployed but with labor market experience	Unemployed new entrants
Construction	0.09	-0.09	0.03
	(0.82)	(-1.07)	(0.18)
Transport	0.13	-0.09	-0.16
	(1.32)	(-1.01)	(-1.46)
Trade (wholesale and retail)	0.10	-0.11	-0.01
	(1.50)	(-1.91)*	(-0.14)
Professional and public administration	0.22	-0.12	-0.08
	(3.06)**	(-1.96)*	(-1.19)
Other industry (finance, entertainment, etc.)	0.15	-0.07	0.10
	(2.19)*	(-1.20)	(1.48)
State unemployment rate	-0.02	-0.01	-0.03
	(2.39)*	(-0.27)	(-3.06)**
Use of multiple search methods	0.01	-0.13	0.04
	(0.10)	(-3.45)**	(0.74)
Distance travelled to search for work	0.01	-0.01	0.03
	(0.30)	(-2.10)*	(4.62)**
Reservation wage	0.0002	-0.0001	-0.0001
	(1.78)*	(-1.20)	(-0.07)
Number of contacts made with employers	0.01	0.01	0.01
	(5.86)**	(6.41)**	(4.06)**
Predominant method of search			
State employment service	-	-	-
Private employment service	-0.03	0.10	0.14
	(-0.25)	(1.14)	(1.06)
Asked friends and relatives	-0.10	0.09	0.11
	(-0.95)	(1.28)	(1.24)
Placed/answered newspaper advertisements	0.05	0.11	0.24
	(0.47)	(1.62)	(2.59)**
Civil service test	-0.26	-0.15	0.37
	(-1.22)	(-0.57)	(1.34)
Contacted CBO	0.04	0.19	0.06
	(0.14)	(0.56)	(0.23)
Contacted SPO	0.23	0.37	0.36
	(1.77)*	(3.26)**	(3.19)**
Asked teachers/profs. etc.	-0.05	-0.09	0.05
	(-0.27)	(-0.29)	(0.32)
Checked labor unions	0.50	-0.15	-
	(1.40)	(-0.68)	
Applied directly to employers	-0.13	-0.01	0.13
	(-1.23)	(-0.07)	(1.46)
Used other methods	-0.20	0.23	0.57
	(-1.21)	(1.38)	(2.76)**
Intercept	0.62	0.11	0.17
	(2.01)*	(0.45)	(0.51)
Number of respondents	568	817	429
R^2 adjusted	0.23	0.13	0.39
F ratio	5.64	4.31	8.71

**Significant at 1 percent level.

* Significant at 10 percent level.

[a] Number of offers expressed in log form.

confirmed by the industry variables and no doubt largely reflects relative supply and demand conditions faced by particular occupations and industries. A number of other variables attained levels of statistical significance; however, their relative impact was generally quite small. For example, while 'number of contacts made with employer' was highly significant in all cases (influencing offers received in a positive way), the degree of influence was extremely small. An important exception was with multiple search methods and the unemployed group. However, although the degree of influence was quite substantial and significant, the direction of influence was negative. In summary, therefore, it appears that alternative search methods do not exert a great degree of influence on the number of job offers received: occupation and industry of jobseeker appear to be more important factors. These results are not surprising. It should be kept in mind, however, that the majority of jobseekers (approximately 80 percent) in fact tend to accept the first job offer received. Under such circumstances, the number of offers received may not be a particularly good criterion of effectiveness. Furthermore, in the absence of information as to whether more job offers is better than less job offers, there are problems associated with using offers received as an effectiveness criterion. That a particular method of search is associated with more job offers that are rejected by the job seeker may itself be interpreted as an indication of inefficiency or ineffectiveness.

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CHAPTER 4

RACE, EMPLOYMENT AND EDUCATIONAL ATTAINMENT

by Joan E. Crowley

I. INTRODUCTION

One of the many explanations offered for the relatively low occupational prestige and earnings of black Americans has been their lack of access to quality education, long seen as a key to occupational advancement in the United States. In recent years, however, the difference in the occupational attainment of blacks and whites has narrowed considerably, implying an eventual narrowing of economic outcomes as well (U. S. Bureau of Census, 1982). In recent studies, blacks have been found to aspire to higher levels of education than whites, with the race difference increasing if socioeconomic factors are held constant (Crowley, et al., 1983; Howell and Frese, 1982, p. 157). This paper will attempt to explore the dynamics of educational attainment by young people in the United States, with a focus on possible race differences in attaining desired levels of schooling.

It is hypothesized that minorities place more emphasis on education than do whites, ceteris paribus, as a means of replacing an inadequate informal network with a formal credential to present to prospective employers. Blacks are more likely to use formal methods of job search--placement offices and employment services, than are whites, despite the fact that informal methods--referrals from friends or direct application to employers--appear to produce the most satisfactory results. These race differences are usually explained by noting that, due to their concentration in less desirable jobs, blacks are less likely to have an effective network of contacts which could provide referrals to jobs with good pay or potential for advancement (See Chapter 3 of this volume and Becker, 1980). The same argument should extend to other minority groups, and to women entering previously male fields. The relative lack of informal networks should increase the importance of formal educational credentials for minorities.

If blacks do place more reliance than whites on formal educational credentials, it is important to know to what degree they are actually able to fulfill their aspirations, and what barriers they face in the process. This analysis uses data from the NLS youth panel to look at educational expectations[1] and educational attainment in 1982 as functions of their initial 1979 levels, background variables, and the employment and family role experiences in the intervening three years.

While educational attainment is important in understanding variations in labor market experiences of young people, educational expectations or aspirations are important in understanding variations in educational attainment. If, for example, minority youth desire less education than whites, the discrepancies in education would be of less concern to policy makers than if minorities had educational goals equal to or greater than whites but minorities faced more problems in attaining their goals. Recent research has emphasized the importance of intentions as determinants of actions (Bentler and Speckart, 1981; Kahle and Berman, 1979; Liska, et al., 1984). The model guiding this analysis posits that background factors (such as parent's education) produce educational intentions (expectations), and that these expectations interact with situational resources (income, ability) in determining eventual educational attainment.

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[1] Youths reported both how much education they desired and how much education they expected to get. As expected, these two variables are highly correlated, but there are some important conceptual and empirical differences. Conceptually, expected education should be more realistic, reflecting real life constraints (money, family obligations, ability), while aspirations may represent more wishful thinking. Expectations for additional education also imply a greater motivational commitment to school, so this variable should be more closely related to actual enrollment and educational attainment (Bentler and Bonnett, 1980). Empirically, research on the initial year of the NLS youth panel indicated that expected education tended to produce stronger relationships with other variables than did desired education, suggesting that expectations are measured with less noise than are aspirations (Crowley and Shapiro, 1982). Since patterns of correlations with associated variables are quite similar for the two attitudinal measures, for this paper only expectations will be used.

Most of the previous studies in this area involve school-based samples studied cross-sectionally. The NLS includes youth who have left school, and it covers enough time to determine how stable youthful aspirations are and how successful youth are in meeting their goals. The large samples of blacks and Hispanics in the panel make possible a detailed look at differences in the dynamics of educational attainment by race.

Three separate groups, defined by their 1979 educational status, will be investigated: youth who were enrolled in 11th or 12th grade; youth who were out of school; and youth who were in college. Each group faces a different educational decision in the observed period. The high school students will decide whether or not to continue their education past high school; the out of school youth may choose to return to school; and the college students will either continue their educations, graduate, or leave without receiving a degree.

The first part of this chapter will use tabular analysis to show the patterns of educational attainment and expectations over the period from 1979 to 1982. The second part will present a model of educational attainment derived from previous literature and apply it to the NLS data.

II. MEASUREMENT OF EDUCATION

Several indicators of educational attainment and goals are used here. Attainment is most simply defined as years in school. The simplicity of this measure is somewhat complicated by the difference in types of schools which could be attended. In this analysis, trade school education will not be considered, only high school and two- or four-year colleges. Where possible, degrees from two-year colleges will be presented separately from two years of a four-year college. Educational expectation is measured on a scale ranging up to 17, where 17 represents a post-graduate degree.[2]

Because a major question to be addressed by this study is whether minorities have more difficulty than whites in attaining their goals, a success variable was constructed by comparing 1979 expectations and 1982 attainment. Youth still enrolled in school are counted either as being "successfully" on their way to the goal, or put in as a separate category. Many youth changed their educational expectations either upward or downward over the three-year period, so a second success variable was constructed using expectations and attainment both measured in 1982. The 1979-1982 measure of success indicates how well youth fared in meeting earlier goals, and the 1982-1982 measure should show how many still desire more education.

While race differences in attaining educational goals may suggest barriers to education, such data give very little information about the nature of such barriers. The NLS includes an item each year asking youth who have left school their reason for leaving. Their answers suggest what the youth themselves see as standing between themselves and higher levels of education.

III. NET CHANGES IN EDUCATIONAL EXPECTATIONS AND ATTAINMENTS, 1979-1982

Table 4.1 shows educational attainment in 1982 by attainment in 1979,

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[2] Unfortunately, it is not possible to differentiate youth who expect to attend only two years of college from youth who expect to get a two-year degree.

Table 4.1 Educational Attainment in 1979 and 1982 for Youth Enrolled in School in 1979

(Percentage Distributions)

Educational attainment 1979	% of Total	Educational Attainment 1982				
		Less than 12 years	12 years	Some College	Associate Degree	16 or more years
% of Total	100	29	35	25	2	10
Less than 12 years	76	39	44	17	1	0
12 years	9	0	17	74	6	3
13 or more years	15	0	0	34	4	62

Universe: Enrolled civilians in 1979, interviewed in 1982. (weighted N=21,376,000; unweighted N=7,081) separately for in-school and out-of-school youth. In 1979, three quarters of enrolled respondents were in high school. By 1982, 62 percent of the youth who were in high school had graduated, and eighteen percent had gone on to college, although none had completed a baccalaureate. Similarly, most of the college students had gone on to finish their degrees. A small proportion of the population had received associate's degrees.

The marginal distributions of Table 4.2, educational expectations 1979 by educational expectations 1982 for enrolled respondents, show a general increase in educational expectations, with over half of the sample expecting at least a baccalaureate and a fifth expecting to go on to post-graduate education. Youth who expected degrees tended to maintain that expectation, but non-degree expectations were highly unstable. Almost two-thirds of the enrolled youth who expected to complete less than 12 years of education in 1979 expected to complete at least high school three years later.

The interpretation of expectations for some college below the BA level is clouded by the fact that a score of 14 could either mean two years of college with no degree or college leading to an associates degree. It is reasonable to presume that many youth reporting that they expect to complete 13, 14, or 15 years of school are actually indicating that they expect to leave school at the end of the current enrollment. Fewer than one respondent in 20 reports expecting to complete 13 or 15 years of schooling. However, over ten percent report expecting 14 years of schooling, no doubt reflecting expected enrollment in two-year programs.[3] Note that the majority of youth expecting 14 years of education in 1979 expect either to stop with a high school diploma

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[3] The problem is further complicated by the fact that some youth, especially those still in high school, may be reporting expectations for trade school enrollment, which is not counted as regular schooling by our definitions.

Table 4.2 Educational Expectations in 1979 and 1982 for Youth Enrolled in School in 1979

(Percentage Distributions)

Educational expectations 1979	% of Total	Educational Expectations 1982					
		Less than 12 years	12 years	13 or 15 years	14 years	16 years	17 or more years
% of Total	100	3	28	5	13	31	21
Less than 12 years	2	36	50	2	9	4	0
12 years	32	7	60	5	14	12	2
13 or 15 years	4	2	29	13	24	24	9
14 years	11	1	25	9	28	33	5
16 years	35	1	9	4	11	51	24
17 or more years	17	0	4	2	4	27	64

Universe: Enrolled civilians, interviewed in 1982. (weighted N=21,314,000; unweighted N=7,060) or to continue on to a bachelor's degree in 1982, with almost the same proportions revising their estimates up as down.

High educational expectations, bachelor's degree and beyond, are highly stable. Almost equal proportions of those with high expectations expect bachelor's degrees or expect to continue to go on for post-graduate education. Those who revise downward below the bachelor's degree are about equally split between expecting high school diplomas and expecting associate degrees.

For out-of-school youth, increased education means going back to school rather than continuing enrollment. Most of those who were out of school in 1979 had high school diplomas, but about a third were high school dropouts (Table 4.3). Dropouts were most likely to increase their educational level: 15 percent of the high school dropouts reported having completed either a high school degree or receiving a GED by 1982. One tenth of the dropouts who had attended some college had completed bachelor's degrees by 1982. The group least likely to obtain additional education were the high school graduates.

Predictably, relative to the in-school group, the out-of-school youth reported relatively little change in their educational expectations. (Table 4.4). High school graduates were least likely to change. Out-of-school youth with very high expectations were more likely to moderate their ambitions than are their student counterparts, but these modifications were not as great as might be expected. The majority of youth who expected to get a college degree or more in 1979 maintained these expectations in 1982.

Despite a fairly substantial amount of change by individual respondents in their expectations, the marginal distributions remain quite similar, with no general trend in either direction for the out-of-school youth, and a slight increasing trend for students. Interpretating the results is difficult,

Table 4.3 Educational Attainment in 1979 and 1982 for Youth Out of School in 1979
(Percentage Distributions)

Educational attainment 1979	% of Total	Educational Attainment 1982				
		Less than 12 years	12 years	Some College	Associate Degree	16 or more years
% of Total	100	27	58	14	0	1
Less than 12 years	32	85	15	0	0	0
12 years	57	0	94	6	0	0
13 or more years	12	0	0	89	2	10

Universe: Out-of-school civilians in 1979, interviewed in 1982.
(weighted N=11,328,000; unweighted N=3,826)

Table 4.4 Educational Expectations in 1979 and 1982 for Youth Out of School in 1979
(Percentage Distributions)

Educational expectations 1979	% of Total	Educational Expectations 1982					
		Less than 12 years	12 years	13 or 15 years	14 years	16 years	17 or more years
% of Total	100	13	48	6	15	14	4
Less than 12 years	14	55	36	2	5	2	1
12 years	49	9	70	4	9	6	1
13 or 15 years	8	1	25	26	27	18	3
14 years	15	2	33	8	34	21	3
16 years	12	1	16	5	23	43	12
17 or more years	3	0	7	9	5	39	39

Universe: Out-of-school civilians in 1979, interviewed in 1982. (weighted N=11,226,000; unweighted N=3,762) because the expectation tables do not take into account the initial education level of the respondents. Next we break down the sample into more homogeneous groups, and make the comparisons of educational experiences by race and sex which will lay the groundwork for exploring barriers to educational attainment.

1979 high school students.

High school students may either stay and graduate, perhaps to continue to college, or dropout. Because the dynamics of dropping out have been addressed elsewhere (Borus, 1982), we focus here on the decision to stay in school and go to college. The analysis will be restricted to respondents enrolled in 11th or 12th grades in the spring of 1979. All of the 1979 12th graders and most of the 11th graders should have been out of high school for at least two years by the time of the 1982 interview.

Table 4.5 describes the educational attainments and expectations of these older high school students during the three years from 1979 to 1982, by race and sex. Educational attainment refers to the highest grade completed: i.e., youngsters currently enrolled in 11th or 12th grade have completed the 10th or 11th. It is notable that Hispanic males are substantially more likely than other groups to have completed only the 10th grade. Other research has found that Hispanics are more likely to be held back, often due to language problems (Fligstein and Fernandez, 1983). The relatively large proportion of the sample who report having completed only 10 years of education can be attributed mainly to youth dropping out between 11th and 12th grades, since seven percent of the youth reported less than 12 full years of education by 1982.

It is striking that although 7 percent have dropped out, only one in one hundred of the respondents report expecting to. For the entire group, the

Table 4.5 Educational Indicators for Youth in 11th and 12th Grades in 1979, by Race and Sex
(Percentage Distributions)

Chacteristics	Female			Male			Total
	Black	Hispanic	White	Black	Hispanic	White	
Percent of total	7	2	39	7	3	41	100
Educational attainment, 1979							
10th Grade	56	56	54	53	59	52	54
11th Grade	44	44	46	47	41	48	46
Total percent	100	100	100	100	100	100	100
Educational expectations, 1979							
Less than 12 years	1	1	0	1	1	1	1
High school graduate	37	34	33	44	37	40	37
Some college	17	23	24	13	16	14	19
Bachelor's Degree or Greater	45	41	43	43	46	45	44
Total percent	100	100	100	100	100	100	100
Educational attainment, 1982							
Less than 12 years	10	10	5	16	16	6	7
High school graduate	52	58	52	56	54	54	53
Some college or greater	38	32	43	28	30	40	40
Total percent	100	100	100	100	100	100	100
Educational expectations, 1982							
Less than 12 years	1	1	1	3	3	1	1
High school graduate	24	27	33	28	24	36	33
Some college	25	35	23	20	28	17	21
Bachelor's degree or greater	50	37	44	49	45	45	45
Total percent	100	100	100	100	100	100	100
Success in reaching 1979 goals[a]							
Yes	30	27	29	29	24	34	31
Still in school	35	28	39	29	29	37	37
No	36	45	32	43	47	29	32
Total percent	100	100	100	100	100	100	100

Table 4.5 (Continued)

Chacteristics	Female			Male			Total
	Black	Hispanic	White	Black	Hispanic	White	
Success in reaching 1982 goals[a]							
Yes	21	22	33	25	20	36	32
Still in school	35	28	39	29	29	37	37
No	45	50	28	47	51	27	31
Total percent	100	100	100	100	100	100	100
Reason for leaving school							
Got degree	65	65	70	61	49	69	68
Got married, pregnant, home responsibilities	7	6	4	1	2	0	3
Don't like school, poor grades	3	5	7	6	14	7	7
Work, money problems	15	9	8	14	16	11	11
Expelled	1	0	0	4	2	1	1
Other	10	15	11	15	19	12	12
Total percent	100	100	100	100	100	100	100

UNIVERSE: Civilian high school students in 1979, interviewed in 1982. (weighted N=7,052,000; unweighted N=2,359

[a]UNIVERSE: Civilian high school students in 1979 interviewed in 1982, who expected more education than they had obtained in 1979. (weighted N=7,059,000; unweighted N=2,363)

[b]UNIVERSE: Civilian high school students in 1979, interviewed in 1982, out-of-school, 1982. (weighted N=4,018,000; unweighted N=1,418)

modal expectation is for a bachelor's degree, and the next largest category is high school graduation. Women are more likely than men to aspire to some college, especially white and Hispanic women. Overall, almost two-thirds of the late high school sample expect to complete at least one year of college.

By 1982, all youth in the high school sample should have been out of high school for at least two years, if they graduated on schedule. Over ninety percent of the sample had in fact graduated from high school. The proportion going on to college, forty percent, is substantially lower than the proportion who had expected to go to college. Some of these youth may be deliberately postponing college entry for various reasons.

Minority males were least likely to report having completed high school, and whites are more likely than others to have gone to college. Among blacks, there is a large difference by sex in college enrollment. Almost two-fifths of the black women had completed at least one year of college, ten percent higher than the proportion of black men who reported the same level of attainment. Hispanics, both men and women, are relatively unlikely to go on to college.

The distribution of educational expectation does not change much when the total sample is considered. Somewhat fewer youth expect to stop with a high school diploma, somewhat more expect to go to college. However, there are substantial shifts within the minority groups. There is a twelve percent increase in the proportion of Hispanics, both women and men, who expect to complete some college, accompanied by a very small decline in the proportion expecting a bachelor's degree or more. Blacks increased their educational expectations generally, with increases both in the "some college" and the bachelor's categories. Whites, on the other hand, stayed quite stable. Thus, the gap between the proportion expecting to go to college and the proportion who actually went to college cannot be accounted for by any reduction in desire for education. Especially among minorities, the general trend was to increase the amount of education desired.

A short-hand summary of the match between expectations and attainment was created by simply contrasting the two variables; the youth were coded as "successful" if the respondent was out of school and the amount of education attained in 1982 was greater than or equal to expectations in 1979; as "still in school"; or "not successful" if the youth was out of school in 1982 and had not attained the level of education expected in 1979. Because of the large proportion of this subsample still in school, it is easier to speak of "failures" than successes, keeping in mind that at least a portion of the current failures will eventually return to school. To keep the focus on the ability of youth to meet educational goals, the success variables are presented only for youth who expected to attain more education than they had already completed in 1979, that is, youth who still had goals to meet.

Clearly, the group least likely to meet their educational goals is the Hispanics. Whites, especially white males, are most successful. The largest gender gap shows up among black youth, with black females being less likely to have left school without completing their expected education than black males.

While success can be defined in terms of early expectations, it is also instructive to look at success in terms of current expectations. How many out-of-school youth still expect to increase their education? The success variable was constructed using 1982 expectations. Of course, the same respondents are still in school in 1982, but the distributions of successes and failures among the out-of-school youth are different. Whites seem to be more likely to have fit their goals to their attainments, so that a slightly larger percentage of both males and females fall into the 1982 success category than was true for the 1979 variable. For minorities, the pattern is reversed. The proportion wanting more education than they have attained is actually increased if current rather than previous goals are used as the standard.

To help explain why there might be a gap between expected and attained education, respondents who had left school were asked their reasons for leaving. A large set of responses was collapsed into into four major categories in order to provide enough cases for discussion. The four categories were getting the desired degree, home responsibilities including pregnancy or marriage, dislike of school or poor grades (presumably highly correlated), and financial reasons--either to take a job or because of money problems. It was presumed that those leaving school because of money problems were quite likely to enter the labor market, and so to be part of the group leaving school in order to work. A very small fraction of youth left school because they were expelled, but this category is presented because of its relevance to issues about the quality of education. Various other reasons were collapsed into one residual category.

Most of the high school sample who were out of school by 1982 reported that they had left school because they had completed their degrees. Note that this degree was not necessarily the highest to which they aspired: the vast majority are high school diplomas, although a fraction had completed two-year college courses and received associate degrees. Hispanic males are conspicuously underrepresented among those leaving school with a degree, and overrepresented among those leaving school because of poor grades or because they didn't like school. Money problems are most likely to be mentioned by minority males and by black females, although the difference between minorities and majority whites is not large among the males.

1979 college students.

Table 4.6 shows the distributions of the educational attainment and expectation variables for the subsample of youth who were enrolled in college in 1979. Whites make up a larger proportion of college students than they do of the high school sample, as expected. The age range of the NLS assured that in 1979 there would be at least some youth in almost all stages of undergraduate school, with very few post-graduate students. Overall, whites tended to be somewhat ahead of minorities in college, while the mean attainment for all sex-race groups hovered around thirteen years. Black females had the lowest average attainment.

Among the college sample, distributions for 1979 expectations show that the gender gap between black males and black females expressed by high school students reverses for college students, with men having higher expectations than women. In general, men in college are much more likely to expect to go on to graduate school than are women, while women are more likely than men to expect to complete less than four years of college.

The educational attainments of college students over the three years between the 1979 interview and the 1982 interview does not show as much difference between men and women as might have been predicted from the 1979 expectations. Note that if all college students had stayed in school until finishing their degrees, the distribution of attainment would show very few respondents with less than 15 years of education. We assume that respondents who report 12 or 13 years of schooling in 1982 have dropped out of school at some point in the period (although some of the "dropouts" may have returned by 1982), and we further assume that minorities, especially Hispanic women, are more likely to have dropped out. At the upper end of the distribution, men

Table 4.6 Educational Indicators for Youth Enrolled in College in 1979, by Race and Sex (Percentage Distributions)

Chacteristics	Female			Male			Total
	Black	Hispanic	White	Black	Hispanic	White	
Percent of total	6	2	41	4	2	44	100
Educational attainment, 1979							
12	46	45	39	43	41	34	37
13	28	27	29	24	32	29	29
14	17	18	18	21	16	22	20
15 or more	9	11	14	13	11	16	14
Total percent	100	100	100	100	100	100	100
Mean	12.88	12.94	13.08	13.02	13.00	13.19	13.11
Educational expectations, 1979							
13-15	17	24	18	11	12	9	13
16	55	47	51	46	51	45	48
17 or more	28	29	32	43	37	46	39
Total percent	100	100	100	100	100	100	100
Educational attainment, 1982							
12	7	5	6	14	9	5	6
13	18	28	11	16	17	7	11
14	27	23	17	19	26	16	18
15	27	19	25	22	14	29	26
16	19	25	36	24	27	34	33
17 or more	1	1	4	4	7	9	6
Total percent	100	100	100	100	100	100	100
Educational expectations, 1982							
13-15	20	20	17	13	14	11	14
16	45	44	37	35	43	38	38
17 or more	36	36	46	53	43	51	48
Total Percent	100	100	100	100	100	100	100
Success in reaching 1979 goals[a]							
Yes	11	16	24	8	18	18	19
Still in school	39	42	36	39	28	47	41
No	50	42	40	54	54	35	39
Total percent	100	100	100	100	100	100	100
Success in reaching 1982 goals[a]							
Yes	15	8	21	12	22	20	19
Still in school	39	42	36	39	28	47	41
No	46	50	43	50	50	33	40
Total percent	100	100	100	100	100	100	100

Table 4.6 (Continued)

Chacteristics	Female			Male			Total
	Black	Hispanic	White	Black	Hispanic	White	
Reason for leaving school[b]							
Got degree	50	36	66	39	43	61	61
Got married, pregnant, home responsibilities	10	3	6	7	2	0	4
Don't like school, poor grades	3	5	5	2	2	6	5
Work, money problems	20	34	8	25	36	14	13
Expelled	1	2	0	1	0	1	1
Other	16	20	15	25	16	18	17
Total percent	100	100	100	100	100	100	100

UNIVERSE: Civilian college students in 1979, interviewed in 1982. (weighted N=5,040,000; unweighted N=1,483)

[a] UNIVERSE: Civilian college students in 1979, interviewed in 1982, reporting 1979 educational expectations higher than 1979 educational attainment. (weighted N=5,080,000; unweighted N=1,492)

[b] UNIVERSE: Civilian college students in 1979, interviewed in 1982, out-of-school, 1982. (weighted N=2,875,000; unweighted N=891)

are generally more likely to have received 15 or more years of education than women. This sex difference is roughly constant by race.

Comparison of the distributions of expected education in 1982 with expected education in 1979 suggests that going to college leads to wanting more college, as demonstrated by the increase in the proportion of youth aspiring to graduate school. The largest such increase was reported by white women. Young men are slightly more likely to report expecting some college in 1982 than in 1979. The increased aspiration for graduate school seems to have come mainly from among those initially aspiring to a bachelor's degree.

The two success variables show that black and Hispanic men and black women have the highest failure rates, while white males are least likely to be out of school and wanting more education. Using 1979 goals compared to 1982 goals, we see no large increase in the proportion of failures except among Hispanic women, suggesting that the big increase in expectations for graduate school is concentrated among those still in college.

Reasons for leaving school among college students are very similar to those reported for high school. Whites are more likely than minorities to say that they left upon completion of a degree. Minorities, on the other hand, are more likely than whites to leave because of money problems or to find work; Hispanics are more likely to report leaving for this reason than are blacks. It was expected that leaving school for family reasons would be reported primarily by women, but this prediction held only among whites, where 6 percent of the women and virtually none of the men left due to family constraints. Among minority youth, both men and women gave family responsibilities as the reason for leaving. Hispanics actually were less likely to use this reason than were blacks or white women.

Youth out of school in 1979.

Most of those out of school in 1979 were high school graduates who had not gone on to college (Table 4.7). Large differences appear by race, however. Whites are most likely to be high school graduates; over half of the out-of-school Hispanics are high school dropouts; and the proportion of black dropouts falls between the proportions for whites and Hispanics. In general, women within each racial group are less likely to have dropped out and more likely to have attended college than their male counterparts, with the largest sex difference showing up among the blacks.

Educational expectations in 1979 were much higher than educational attainments, even among this out-of-school subsample. The proportion expecting to attend college ranged from 32 percent for Hispanic men to 47 percent for black women. On the other hand, well under half of the dropouts expected to remain dropouts.

A relatively small proportion of the out-of-school population had increased their 1979 educational level at the end of three years. The proportion of dropouts declined modestly, about six percent for each group. The proportion of the subsample completing at least one year of college rose modestly, by about three percent. These increases were spread fairly evenly by sex and race. Educational expectations changed less, overall, than did educational attainments. A very small trend was for further decreases in the proportion expecting to have less than a high school diploma along with increases in the proportion expecting to go to college.

The success variables are presented only for the subset of youth whose educational expectations were higher than their attainments in 1979. For the out-of-school sample, this restriction substantially reduces the number of cases under consideration. The success variables, as expected, show that most

Table 4.7 Educational Indicators for Youth Out of School in 1979, by Race and Sex
(Percentage Distributions)

Chacteristics	Female			Male			Total
	Black	Hispanic	White	Black	Hispanic	White	
Percent of total	7	4	42	7	3	37	100
Educational attainment, 1979							
Less than 12	37	55	25	49	61	30	31
12	47	36	60	44	32	61	57
13 or more	16	9	15	7	8	10	12
Total percent	100	100	100	100	100	100	100
Educational expectations, 1979							
Less than 12	8	23	12	15	26	15	14
12	46	40	50	45	42	51	49
13 or more	47	37	38	41	32	34	37
Total percent	100	100	100	100	100	100	100
Educational attainment, 1982							
Less than 12	32	48	20	44	54	25	27
12	48	42	62	47	33	62	58
13 or more	20	10	18	9	13	13	15
Total percent	100	100	100	100	100	100	100
Educational expectations, 1982							
Less than 12	9	20	11	11	24	14	13
12	41	41	48	49	45	51	48
13 or more	50	39	41	40	31	36	39
Total percent	100	100	100	100	100	100	100
Success in reaching 1979 goals[a]							
Yes	5	5	6	6	6	6	6
Still in school	9	7	12	6	11	10	10
No	86	88	82	88	83	84	84
Total percent	100	100	100	100	100	100	100
Success in reaching 1982 goals[a]							
Yes	22	25	32	16	20	31	28
Still in school	9	7	12	6	11	10	10
No	69	68	56	78	69	60	62
Total percent	100	100	100	100	100	100	100
Reason for leaving school							
Got degree	40	30	53	35	30	51	49
Got married, pregnant, home responsibilities	25	25	14	3	8	2	10

Table 4.7 (Continued)

Chacteristics	Female			Male			Total
	Black	Hispanic	White	Black	Hispanic	White	
Don't like school, poor grades	9	11	13	20	19	20	16
Work, money problems	10	15	9	19	24	13	12
Expelled	2	0	0	9	4	3	2
Other	14	19	11	14	16	12	12
Total percent	100	100	100	100	100	100	100

UNIVERSE: Out-of-school civilians in 1979, interviewed in 1982. (weighted N=11,261,000; unweighted N=3,777)

[a]UNIVERSE: Out-of-school civilians in 1979, interviewed in 1982, whose 1979 educational expectations exceeded their 1979 educational attainments. (weighted N=5,646,000; unweighted N=2,100)

of the out-of-school sample had failed to meet their educational goals. Failure rates for 1979 goals were highest for minority females and for black males. Given the relatively small changes in education and expectations, the overall failure rate for 1982 goals is, surprisingly, 22 percent lower than the failure rate for 1979 goals. As expected, whites are most likely to have completed their goals, and whites also show the biggest improvement in success from 1979 to 1982. Blacks have the least success, especially black males. It appears that at least part of the improvement comes not from obtaining additional education but from adjusting expectations to match attainment. Since whites seem no more likely than minorities to have increased their educational levels, the difference in success rates probably reflects attitudinal changes.

As with the high school and college groups, among the out-of-school group getting a degree is the reason most whites give for leaving school. It is also the most prevalent reason given by other groups. However, Hispanic men are almost as likely to leave school to go to work as they are to leave because they graduated. Men, especially minority men, are more likely than women to leave school to work than women. There are few race differences in the proportion of youth reporting that they left school because they were not happy there, another response given substantially more often by men than by women. The expected sex difference in the proportion of youth leaving school for family reasons shows up sharply for the out-of-school sample. One fourth of Hispanic and black women say that they left school for family considerations. Given the relative concentration of dropouts in this sample, it is not surprising that a significant number say they were expelled. Blacks are expelled more frequently than other groups.

III. MODELS OF ATTAINMENT

Level of education has been identified as an important factor in determining where in the occupational structure an individual will enter, which in turn affects occupational advancement (Treas and Tyree, 1979). It is important, too, to understand the process by which some individuals end up with more education than others. Three sources were used to develop a model for multivariate analysis of the various measures of educational attainment--two based on theoretical work on attainment and one focusing on role transitions during young adulthood.

The most common framework for assessing educational and occupational attainment is the Wisconsin model. Briefly,

> The model ... assumes that predetermined social structural and psychological factors, i.e., socioeconomic status and mental ability, affect the youth's academic performance and the influence signifcant others have on him; that the influence of significant others and possibly his own ability affect his levels of educational and occupational aspiration; and that levels of aspiration affect educational and occupational status attainment. Thus, the model provides a causal argument linking social origins and ability with educational and early occupational status attainment by means of intervening behavioral mechanisms (Sewell, et al., 1970).

The Wisconsin model was initially developed on an all-male sample, and other studies have found that the mechanisms do not entirely hold for other groups, notably for blacks and for white females. Specifically, many of the indicators of socioeconomic status associated with educational attainment for white males are less strongly associated with attainment for blacks and females (Morgan, et al., 1979; Hout and Morgan, 1979).[4]

Gottfredson (1982) has developed a model of occupational attainment which draws from developmental as well as socialization processes. Her model emphasizes stages in development of self-concept relevant to occupation, with orientations to status and sex-role appropriateness developed before specific occupational aspirations are formed. Analysis of the first wave of the NLS indicated that sex role attitudes were indeed strongly related to educational aspirations and expectations, both for young men and young women (Crowley and Shapiro, 1982).

While the NLS does not provide data on many of the key constructs used in either of these theoretical approaches, it does contain the principal measures of socioeconomic background. In addition, the NLS is ideally constructed to include measures of life events which should affect the decision to enter or leave school. Specifically, youth who marry or become parents should be less likely to continue their education. These transitions make going to school more difficult in two ways: marriage establishes a new family unit, which increases the youth's need for income, and the need for income is exacerbated by the birth of a child. Secondly, especially for young women, parenthood increases the demands for time spent at home, both for direct child care and for home maintenance.

It is also hypothesized that youth who leave school and have difficulty in establishing themselves in the labor market should tend to increase their educational aspirations. Particularly for school dropouts, the need for the educational credentials should become salient if jobs are not available. This would account for the greater increase in educational expectations among minority dropouts than among white dropouts. The job search literature suggests that whites apparently have more effective informal networks for obtaining good jobs than do blacks, and this effect should be magnified at lower educational levels among those who have little in the way of formal credentials to offer employers. A personal reference may be the only source of information about the quality of performance an employer could expect from a teenaged job applicant. The unemployment rate for white teenagers is typically half the unemployment rate for black teenagers, suggesting that white dropouts are more likely than blacks to enter the labor market successfully.

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[4] Interestingly, Hout and Morgan (1975) found that black females had a pattern of results more similar to the pattern for white males than did either white females or black males.

Three multivariate models will be used to explore young people's success in meeting their 1979 educational goals. The first enters basic demographic and family background characteristics, along with sex role attitudes, self esteem, and educational attainment as of 1979. The second model adds a set of dummy variables for 1979 educational expectations, and the third adds both educational expectations and indicators of role transitions to the basic model. The role transitions used for all groups include living apart from parents, marriage, and parenthood. For out-of-school youth, weeks employed and unemployed are also entered, to test the hypothesis that employment difficulties may lead to increased educational aspirations.

All multivariate analyses are based on the general linear model, with modifications appropriate to the measurement level of the dependent variable. Dichotomous variables are analysed using probit, which estimates the probability of succeeding, given the predictor variables.[5] Change in educational expectations is measured as a trichotomy, according to whether the individual's expectations increased, decreased, or did not change. Highest grade completed will be estimated using OLS.

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[5] Probit fits a non-linear function, so the partial derivative of the change in the probability of success depends upon the point of evaluation. A common strategy used here is to calculate the partials at the point where all predictors take on their mean value. This strategy produces distortion in the

IV. RESULTS

Success in Meeting 1979 Educational Goals.

High school students. Table 4.8 shows the probit results describing the youth who had met their 1979 educational goals and had left school by 1982 among the high school sample. In interpreting the results, it must be kept in mind that the analysis is restricted to youth who were out of school in 1982. Thus, for this group, success means at most three years of college. Those who succeeded are therefore predominately high school graduates.

The importance of controlling for expectations is shown in the change in the influence of parent's education. In model A, the less education the parents have, the more likely their children are to meet their educational goals. With level of aspiration controlled, however, children with parents who have a high school education or more are more likely to be able to meet their goals. Youth from intact homes are also more likely to get their desired education. Sex role attitudes are significant in the basic model, but drop out when expectations are controlled.

The range of initial educational attainment for this universe is quite narrow, but even the single year separating those who had completed ten years of education from those who had completed eleven years is significant, and becomes stronger when expectations are taken into account. The pattern no

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interpretation of dummy variables, since they are estimated at a value between zero and one which is not possible in the data--e.g., counting an individual as .54 male. However, the results do give a sufficient indication of the direction and stability of the relationship for the current purpose.

Table 4.8 Probit of Success in Meeting 1979 Educational Goals for Youth Who Were High School Students in 1979

Predictors	A		B		C	
	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean
Constant	-0.427 (-0.44)[a]		-6.084 (-0.89)		-6.943 (-1.02)	
Age	0.055 (1.24)	.022	0.028 (0.44)	.006	0.068 (1.04)	.015
Parent's education						
High school dropout	0.182 (2.32)*	.072	-0.249 (-2.17)*	-.055	-0.253 (-2.17)*	-.055
High school graduate	--	--	--	--	--	--
College	-0.449 (-4.85)*	-.179	0.164 (0.98)	.036	0.111 (0.65)	.024
Lived with both parents at age 14	0.104 (1.43)	.041	0.352 (3.30)*	.078	0.340 (3.10)*	.074
Number of siblings	0.010 (0.73)	.004	-0.003 (-0.14)	-.001	0.0002 (0.01)	.0001
Race and sex						
Black male	-0.430 (-3.90)*	-.171	-0.290 (-1.78)	-.064	-0.223 (-1.32)	-.048
Hispanic male	-0.592 (4.31)*	-.236	-0.446 (-2.22)*	-.098	-0.421 (-2.08)*	-.091
White male	--	--	--	--	--	--
Black female	-0.479 (-0.63)	-.191	-0.196 (-0.17)	-.043	0.135 (0.11)	.029
Hispanic female	-0.724 (-0.95)	-.288	-0.284 (-0.24)	-.063	-0.009 (-0.01)	-.002
White female	-0.248 (-0.33)	-.099	-0.184 (-0.16)	-.041	0.051 (0.04)	.011
Sex-role traditionality	0.082 (4.62)*	.033	-0.017 (-0.61)	-.004	-0.006 (-0.20)	-.001
Self-esteem	-0.028 (-1.84)	-.011	0.032 (1.28)	.007	0.031 (1.18)	.007
Number of children desired	-0.069 (-2.21)*	-.027	0.035 (0.69)	.008	0.044 (0.83)	.009

Table 4.8 Continued

Predictors	A Maximum likelihood estimate	 Partials, evaluated at mean	B Maximum likelihood estimate	 Partials, evaluated at mean	C Maximum likelihood estimate	 Partials, evaluated at mean
Sex interactions with^b:						
Sex-role traditionality	-0.028 (-1.14)	-.011	0.008 (0.21)	.002	-0.0002 (-0.01)	-.0001
Self-esteem	0.002 (0.08)	.001	-0.012 (-0.36)	-.003	-0.005 (-0.16)	-.001
Number of children desired	0.021 (0.50)	.009	-0.003 (-0.03)	-.001	-0.021 (-0.29)	-.005
Educational attainment						
10 yrs.	-0.223 (-2.80)*	-.089	-0.697 (-5.60)*	-.154	-0.702 (-5.50)*	-.152
11 yrs.	--	--	--	--	--	--
Educational expectations						
Less than 12 yrs.	--	--	6.026 (0.90)	1.331	6.229 (0.94)	1.350
12 yrs.	--	--	6.427 (0.96)	1.419	6.617 (0.99)	1.434
13-15 yrs.			3.367 (0.50)	.744	3.426 (0.52)	.743
16 or more yrs.	--	--	--	--	--	--
Lived with parents, 1979	--	--	--	--	-0.011 (-0.03)	-.002
Live with parents, 1982	--	--	--	--	-0.108 (-0.88)	-.023
Married, spouse present, 1979	--	--	--	--	-0.016 (-0.03)	-.003
Married, spouse present, 1982					-0.181 (-1.19)	-.039
Ever had a child, 1979	--	--	--	--	-0.273 (-1.06)	-.059
Ever had a child, 1982	-- --	-- --	-- --	-- --	-0.495 (-3.67)*	-.107

Table 4.8 Continued

	A		B		C	
Predictors	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean
-2 * log likelihood ratio	149.61		1334.04		1358.83	
N	1543		1543		1543	

[a] Number in parentheses is the estimate divided by the standard error.

[b] For interaction terms, sex is coded male equals 1.

UNIVERSE: Civilian high school students in 1979, interviewed in 1982.

doubt reflects the greater proportion of eventual dropouts included in the 10th grade group. Most of these future dropouts no doubt reported, like the other dropouts in the sample, that they expected to complete high school, so their inclusion in the analysis would increase the failure rate, especially when expectations are controlled.

Minority males are less likely to meet their goals than are other groups, but once level of expectations are controlled, the coefficient for black males becomes insignificant. The coefficient for Hispanic males is reduced, but remains substantial and significant. There is no difference between white males and any of the female groups.

Despite their influence on other coefficients in the models, there are no significant differences in success for the various educational expectations dummy variables. Expectations appear to mediate the relationship of social influences on attainment.

College students. College students are a much more homogeneous group than high school students. All youth in this category have shown a positive orientation toward education and all have completed at least high school.

As with high school students, due to the relatively short period of time under investigation, students with lower educational expectations are more likely to have left school by 1982 than are those with very high expectations (Table 4.9). Adding expectations to the model does not have the pervasive effect on other variables which was seen in the analysis for high school students. Parent's education is not significant in any of the equations, probably due to the restriction of the sample to those who have made a commitment to education, either because or in spite of parental influence.

Age, 1979 educational attainment, and 1979 educational expectations all have significant effects on success in meeting the 1979 educational goals.

Table 4.9 Probit of Success in Meeting 1979 Educational Goals for Youth Who Were College Students in 1979

Predictors	A		B		C	
	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean
Constant	1.111 (0.79)[a]		-0.931 (-0.58)		-0.504 (-0.30)	
Age	-0.104 (-1.78)	-.036	-0.151 (-2.25)*	-.045	-0.175 (-2.49)*	-.051
Parent's education						
High school dropout	-0.138 (-0.85)	-.048	-0.187 (-1.01)	-.056	-0.154 (-0.82)	-.045
High school graduate	--	--	--	--	--	--
College	-0.480 (-0.47)	-.017	.127 (1.05)	.038	0.113 (0.91)	.033
Lived with both parents at age 14	0.204 (1.16)	.071	.096 (0.65)	.029	0.077 (0.50)	.022
Number of siblings	0.043 (1.91)	.015	.046 (1.81)	.014	0.043 (1.64)	.012
Race and sex						
Black male	-0.744 (-3.18)*	-.259	-0.835 (-3.01)*	-.248	-0.761 (-2.60)*	-.221
Hispanic male	-0.317 (-1.43)	-.110	-0.343 (-1.30)	-.102	-0.248 (-0.94)	-.072
White male	--	--	--	--	--	--
Black female	0.014 (0.01)	.005	0.232 (0.18)	.069	0.366 (0.27)	.107
Hispanic female	0.293 (0.26)	.102	0.362 (0.27)	.108	0.647 (0.48)	.188
White female	0.525 (0.46)	.182	0.865 (0.66)	.257	0.923 (0.68)	.269
Sex-role traditionality	0.005 (0.19)	.002	-0.046 (-1.50)	-.014	-0.056 (-1.75)	-.016
Self-esteem	-0.022 (-1.13)	-.008	0.002 (0.07)	.001	0.006 (0.27)	.002
Number of children desired	-0.009 (-0.25)	-.003	-0.022 (-0.53)	-.006	-0.028 (-0.65)	-.008

Table 4.9 Continued

	A		B		C	
Predictors	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean
Sex interactions with^b:						
Sex-role traditionality	-0.001 (-0.03)	-.0004	0.046 (0.95)	.014	0.064 (1.28)	.019
Self-esteem	0.011 (0.36)	.004	0.007 (0.19)	.002	.005 (0.14)	.001
Number of children desired	-0.003 (-0.05)	-.001	-0.012 (-0.14)	-.004	-.020 (-0.23)	-.006
Educational attainment						
12 yrs.	--	--	--	--	--	--
13 yrs.	0.696 (4.88)*	.242	1.235 (6.92)*	.367	1.192 (6.54)*	.347
14 yrs.	0.953 (5.54)*	.331	2.007 (8.92)*	.597	1.951 (8.47)*	.568
15 or more yrs.	0.887 (4.37)*	.308	2.566 (9.34)*	.763	2.555 (9.06)*	.743
Educational expectations						
13-15 yrs.	--	--	3.031 (13.21)*	.902	3.319 (13.54)*	.966
16 yrs.	--	--	2.041 (12.65)*	.607	2.182 (12.96)*	.635
17 or more yrs.	--	--	--	--	--	--
Lived with parents, 1979	--	--	--	--	-0.634 (-4.76)*	-.184
Live with parents, 1982	--	--	--	--	0.204 (1.49)	.059
Married, spouse present, 1979	--	--	--	--	-0.372 (-1.06)	-.108
Married, spouse present, 1982	--	--	--	--	0.138 (1.00)	.040
Ever had a child, 1979	--	--	--	--	-0.245 (-0.54)	-.071

Table 4.9 Continued

Predictors	A		B		C	
	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean
Ever had a child, 1982	--	--	--	--	-0.075 (-0.40)	-.022
-2 * log likelihood ratio	98.38		387.88		413.03	
N	888		888		888	

[a] Number in parentheses is the estimate divided by the standard error.

[b] For interaction terms, sex is coded male equals 1.

UNIVERSE: Civilian college students in 1979, interviewed in 1982.

Youth who were further along in college in 1979 are more likely to have succeeded by 1982. The coefficient for age is negative, and the effect is stronger when expectations are entered into the equation, suggesting that youth who are older than their classmates may face a more difficult time in completing their schooling. The higher the educational expectation, the less the likelihood of successful completion, although this is distorted by the fact that most of those who expected to complete a graduate degree have not yet had time to finish.

By and large the adult role indicators were not related to completion of educational goals. Youth who lived with their parents in 1979 were less likely to have succeeded, but the coefficient for living with parents in 1982 was not significant and in the opposite direction.

All other things equal, young black men are less likely than white men to meet their educational goals. As with high school students, there were no substantial coefficients for young women of any race. The coefficient for Hispanic men was negative, but not significant. The significant negative coefficient for black men was reduced only slightly by the addition of educational expectations and role transitions to the equation.

Out of school youth. In many ways, this is the most diverse group of all. The success variable represents youth who have returned to school after leaving, primarily those who finish high school or finish a college degree.

The number of siblings, a variable representing resources available to each child, is significant only for this out-of-school universe (Table 4.10). The larger the family, the less likely the youth is to be able to meet the educational goal. None of the other indicators of family background are significant.

Youth who have only a high school diploma appear to be somewhat less

Table 4.10 Probit of Success in Meeting 1979 Educational Goals for Youth Who Were Out of School in 1979

	A		B		C	
Predictors	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean
Constant	-2.034 (-1.99)[a]		-2.246 (-2.15)*		-2.221 (-1.98)	
Age	-0.045 (-1.41)	-.005	-0.046 (-1.38)	-.004	-0.045 (-1.19)	-.004
Parent's education						
High school dropout	-0.111 (-0.94)	-.011	-0.130 (-1.07)	-.012	-0.138 (-1.12)	-.012
High school graduate	--	--	--	--	--	--
College	0.214 (1.49)	.022	0.255 (1.71)	.023	0.221 (1.46)	.019
Lived with both parents at age 14	0.089 (0.85)	.009	0.098 (0.90)	.009	0.115 (1.03)	.010
Number of siblings	-0.050 (-2.56)*	-.005	-0.049 (-2.45)*	-.004	-0.048 (-2.39)*	-.004
Race and sex						
Black male	0.114 (0.67)	.012	0.161 (0.90)	.014	0.155 (0.84)	.013
Hispanic male	-0.101 (-0.45)	-.010	-0.007 (-0.03)	-.001	0.017 (0.07)	.001
White male	--	--	--	--	--	--
Black female	1.145 (1.06)	.116	1.297 (1.16)	.116	1.610 (1.41)	.137
Hispanic female	1.179 (1.10)	.120	1.447 (1.30)	.130	1.798 (1.58)	.153
White female	1.300 (1.21)	.132	1.466 (1.33)	.131	1.794 (1.59)	.153
Sex-role Traditionality	-0.024 (-0.94)	-.002	-0.032 (-1.20)	-.003	-0.032 (-1.17)	-.003
Self-esteem	-0.003 (-0.16)	-.0003	-0.0003 (-0.01)	-.00002	-0.004 (-0.19)	-.0003
Number of children desired	0.005 (0.11)	.001	0.015 (0.32)	.001	0.026 (0.54)	.002

Table 4.10 Continued

Predictors	A		B		C	
	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean
Sex interactions with[b]:						
Sex-role traditionality	-0.009 (-0.23)	-.001	-0.002 (-0.04)	-.0001	0.002 (0.04)	.0002
Self-esteem	-0.040 (1.41)	.004	0.044 (1.48)	.004	0.052 (1.72)	.004
Number of children desired	0.0003 (0.004)	.00003	-0.020 (-0.27)	-.002	-0.026 (-0.36)	-.002
Educational attainment						
Less than 12 yrs.	1.049 (6.87)*	.107	-0.252 (-0.66)	-.023	-0.218 (-0.56)	-.019
12 yrs.	--	--	--	--	--	--
13 or more yrs.	0.423 (2.06)*	.043	0.409 (1.98)	.037	0.401 (1.89)	.034
Educational expectations						
Less than 12 yrs.	--	--	1.067 (2.63)*	.096	1.133 (2.76)*	.097
12 yrs.	--	--	1.503 (4.09)*	.135	1.527 (4.11)*	.130
13 or more yrs.	--	--	--	--	--	--
Lived with parents, 1979	--	--	--	--	-0.103 (-0.74)	-.009
Live with parents, 1982	--	--	--	--	-0.115 (-0.91)	-.010
Married, spouse present, 1979	--	--	--	--	-0.216 (-1.23)	-.018
Married, spouse present, 1982	--	--	--	--	-0.097 (-0.71)	-.008
Ever had a child, 1979	--	--	--	--	0.116 (0.66)	.010
Ever had a child, 1982	--	--	--	--	-0.317 (-2.06)*	-.027

Table 4.10 Continued

	A		B		C	
Predictors	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean	Maximum likelihood estimate	Partials, evaluated at mean
% of wks employed between 1979 and 1982 interview dates	--	--	--	--	-0.001 (-0.37)	-.0001
% of wks unemployed between 1979 and 1982 interview dates	--	--	--	--	-0.0001 (-0.05)	-.00001
-2 * log likelihood ratio	85.55		124.03		134.07	
N	1685		1685		1685	

[a] Number in parentheses is the estimate divided by the standard error.

[b] For interaction terms, sex is coded male equals 1.

UNIVERSE: Out of school civilians in 1979, interviewed in 1982.

likely than either dropouts or those with some college to increase their education. As usual, the lower the level of educational expectation, the more likely the youth is to be able to attain it.

Parenthood decreases the probability of meeting the early educational goal. None of the other role transition indicators make any substantial difference. In particular, employment history is not associated with successful completion of the expected education. Nor is race a factor in any of the specifications. All in all, the model does not predict well for the return to school of out-of-school youth.

Change in Educational Attainment, 1979 to 1982

Over the three years from the spring of 1979 to the spring of 1982, the in-school groups acquired on the average about 2 years of education, while the out-of-school youth gained on average about 2 months. That is, a substantial portion of the in-school groups stayed in school the entire time, while a substantial proportion of the out-of-school group stayed out of school.

Tables 4.11 through 4.13 show the results of applying the multivariate model to the three universes. For each, age is negatively related to years of school acquired, probably because older youth were closer to finishing their degrees. For other factors, differences appear between out-of-school and in-school youth.

For both high school and college students, coming from an intact family and having well-educated parents were associated with getting more education. The effect of family size was negative, as expected, but fairly small. Educational expectations were very strongly associated with educational attainment. At all levels, youth who expected less education got less education.

In general, it appears that family formation interferes with education.

Table 4.11 Regression Analysis of Change in Educational Attainment Among Youth in High School in 1979.

Independent variables	A coefficient (t-value)	B coefficient (t-value)
Age	-.222 (-11.80)**	-.204 (-10.93)**
Parent's education		
High school dropout	-.118 (-2.71)**	-.089 (-2.08)*
High school graduate	--	--
College	.187 (5.26)**	.142 (4.04)**
Lived with both parents at age 14	.153 (4.13)**	.150 (4.11)**
Number of siblings	-.014 (-1.86)+	-.014 (-1.90)+
Race and sex		
Black male	-.061 (-0.96)	-.036 (-0.58)
Hispanic male	-.115 (-1.23)	-.083 (-0.91)
White male	--	--
Black female	-.089 (-0.26)	.051 (0.15)
Hispanic female	-.244 (-0.70)	-.091 (-0.27)
White female	-.166 (-0.50)	-.073 (-0.22)
Sex-role traditionality	-.001 (-0.07)	.008 (0.93)
Self-esteem	.011 (1.62)	.009 (1.40)
Number of children desired	.004 (0.25)	.007 (0.52)
Sex interactions with[a]:		
Sex-role traditionality	-.003 (-0.26)	-.012 (-1.10)
Self-esteem	-.007 (-0.78)	-.003 (-0.30)
Number of children desired	.021 (1.05)	.014 (0.72)

Table 4.11 Continued

Independent variables	A coefficient (t-value)	B coefficient (t-value)
Educational expectations		
Less than 12 years	-1.160 (-6.82)**	-1.019 (-6.10)**
12 years	-.878 (-23.05)**	-.792 (-20.67)**
13-15 years	-.480 (-11.26)**	-.432 (-10.26)**
16 or more years	--	--
Lived with parents, 1979	--	-.146 (-1.03)
Lived with parents, 1982	--	-.121 (-3.73)**
Married, spouse present, 1979	--	-.010 (-0.05)
Married, spouse present, 1982	--	-.333 (-6.37)**
Ever had a child, 1979	--	-.075 (-0.62)
Ever had a child, 1982		-.306 (-5.36)**
Constant	5.957 (14.76)**	5.807 (13.28)**
R^2	.363	.392
F	70.20	60.40
N	2309	2304

UNIVERSE: Civilian high school students in 1979, interviewed in 1982.

[a] Male equals one for sex interactions.

**Significant at the 1 percent level.

*Significant at the 5 percent level.

+Significant at the 10 percent level.

Table 4.12 Regression Analysis of Change in Educational Attainment for Youth in College in 1979

Independent variables	A	B
	coefficient (t-value)	coefficient (t-value)
Age	-.272 (-12.80)**	-.271 (-12.87)**
Parent's education		
High school dropout	.036 (0.36)	.035 (0.36)
High school graduate	--	--
College	.201 (3.62)**	.135 (2.50)*
Lived with both parents at age 14	.237 (3.36)**	.201 (2.93)**
Number of siblings	-.009 (-0.64)	-.002 (-0.15)
Race and sex		
Black male	-.427 (-3.29)**	-.331 (-2.60)**
Hispanic male	-.264 (-1.50)	-.178 (-1.05)
White male	--	--
Black female	.381 (0.63)	.299 (0.52)
Hispanic female	.369 (0.60)	.265 (0.45)
White female	.545 (0.91)	.367 (0.64)
Sex-role traditionality	-.008 (-0.56)	.005 (0.37)
Self-esteem	.016 (1.44)	.019 (1.76)+
Number of children desired	.040 (1.79)+	.027 (1.27)
Sex interactions with[a]:		
Sex-role traditionality	.009 (0.44)	.001 (0.06)
Self-esteem	.017 (1.04)	.013 (0.81)
Number of children desired	-.002 (-0.04)	-.0001 (-0.00)

Table 4.12 Continued

Independent variables	A coefficient (t-value)	B coefficient (t-value)
Educational expectations		
13-15 years	-.929 (-11.02)**	-.747 (-9.01)**
16 years	-.150 (-2.75)**	-.126 (-2.38)*
17 or more years	--	--
Lived with parents, 1979	--	-.449 (-8.55)**
Lived with parents, 1982	--	-.038 (-0.65)
Married, spouse present, 1979	--	.016 (0.09)
Married, spouse present, 1982	--	-.223 (-3.20)**
Ever had a child, 1979	--	.155 (0.69)
Ever had a child, 1982	--	-.435 (-4.30)**
Constant	5.942 (9.97)**	6.232 (10.64)**
R^2	.189	.249
F	20.02	21.29
N	1472	1471

UNIVERSE: Civilian high school students in 1979, interviewed in 1982.

[a] Male equals one for sex interactions.

**Significant at the 1 percent level.

*Significant at the 5 percent level.

+Significant at the 10 percent level.

Table 4.13 Regression Analysis of Change in Education Among Youth Out of School in 1979

Independent variables	A	B
	coefficient (t-value)	coefficient (t-value)
Age	-.055 (-8.53)**	-.052 (-7.26)**
Parent's education		
High school dropout	-.004 (-0.16)	-.0003 (-0.01)
High school graduate	--	--
College	.121 (4.74)**	.120 (4.60)**
Lived with both parents at age 14	-.064 (-2.95)**	-.050 (-2.22)*
Number of siblings	-.008 (-2.11)*	-.010 (-2.48)*
Race and sex		
Black male	.059 (1.43)	.050 (1.17)
Hispanic male	.125 (2.21)*	.092 (1.56)
White male	--	--
Black female	-.355 (-1.73)+	-.379 (-1.79)+
Hispanic female	-.418 (-2.01)*	-.403 (-1.89)+
White female	-.422 (-2.07)*	-.410 (1.96)*
Sex-role traditionality	-.007 (-1.54)	-.011 (-2.29)*
Self-esteem	.005 (1.39)	.007 (1.89)+
Number of children desired	.022 (2.32)*	.024 (2.55)*
Sex interactions with[a]:		
Sex-role traditionality	-.004 (-0.55)	.003 (0.45)
Self-esteem	-.011 (-2.02)*	-.013 (-2.26)*
Number of children desired	-.017 (-1.21)	-.012 (-0.84)

Table 4.13 Continued

	A	B
Independent variables	coefficient (t-value)	coefficient (t-value)
Educational expectations		
Less than 12 years	-.055 (-1.66)+	-.067 (-1.94)+
12 years	-.089 (-4.17)**	-.082 (-3.72)**
13 or more years	--	--
Lived with parents, 1979	--	-.042 (-1.63)
Lived with parents, 1982	--	-.066 (-2.65)**
Married, spouse present, 1979	--	-.014 (-0.45)
Married, spouse present, 1982		-.089 (-3.60)**
Ever had a child, 1979		.028 (0.89)
Ever had a child, 1982		-.075 (-2.66)**
Percent of weeks employed between 1979 and 1982 interview dates	--	-.002 (-5.27)**
Percent of weeks unemployed between 1979 and 1982 interview dates	--	-.001 (-0.77)
Constant	1.647 (8.39)**	1.790 (8.45)**
R^2	.040	.058
F	9.44	9.04
N	3621	3413

UNIVERSE: Out-of-school civilians in 1979, interviewed in 1982.

[a] Male equals one for sex interactions.
**Significant at the 1 percent level.
*Significant at the 5 percent level.
+Significant at the 10 percent level.

For both high school and college students, getting married or having children were associated with lower levels of attainment. The effect of living away from parents, however, was quite different for the two groups. Very few high school students were living away from their parents in 1979, and the coefficient is non-significant. Those high school youth who were still living at home in 1982, however, had acquired significantly less education than their counterparts. In contrast, for college students, living at home in 1982 was insignificant. However, college students living at home at the time of the 1979 interview reported getting less education than did youth living away from parents. The difference in pattern no doubt reflects age-graded differences in reasons for living with parents. Almost all high school students were living at home in 1979. Three years later, the high school students were at approximately the same stage as the college students in 1979. Living at home while in college may be an indicator of lack of resources by the student and family, so that remaining in school is harder for these youth.

There are no race or sex effects, ceteris paribus, on grade attainment among high school youth. Black college males, on the other hand, acquired significantly less education than did white college males. The effect attenuates, but remains significant, if life cycle transitions are controlled.

The patterns for the out-of-school youth are somewhat different than the patterns for the students. Parent's education is, again, positively associated with educational acquisition. However, youth from intact families tended to get less education than did youth from broken homes Also, coming from a larger family was associated with lower levels of education.

Sex-role attitudes are important for the out-of-school group, although the direction of the effect is inconsistent. More traditional youth reported getting less education, although the relationship is significant only when life-cycle transitions are included in the analysis. Number of children desired, hypothesized to be a measure of orientation to the home, was positively associated with acquiring education, contrary to expectations.

Educational expectations are positively and very significantly related to acquiring education. Out-of-school youth expecting to complete a high school education and no more show less increase in attainment than do dropouts or youth with college expectations.

Indicators of life-cycle stage in 1982 are probably the most important predictors of educational acquisition among out-of-school youth. Youth who had moved out of their family home, married, or had children by 1982 all reported less increase in education than did their counterparts.

The hypothesized relationship between labor market success and education is only partly supported. Youth who were employed for a larger percent of the period between the 1979 and 1982 interviews reported significantly less change in their educational level than did those who worked less. However, there was no relationship between educational change and being unemployed. The relationship between time working and education may be somewhat tautological, reflecting mainly periods spent out of the labor force while going to school.

Finally, compared with white males, women of all races report less change in education. The contrast is greatest for white females. The coefficients for minority men, on the other hand, are positive but not significant.

The differences in patterns between those in school in 1979 and those out of school in 1979 are probably attributable to the high school dropouts who go on to complete a diploma or GED. The dropouts would account for the inverse relationship with family intactness and expected family size. Women are more likely to be high school graduates than men, and the high school graduates tend not to increase their education, perhaps accounting for the relatively small amount of additional education reported by women in this group.

V. CONCLUSIONS

One of the most striking patterns in these results is the high levels of education youth say that they expect to get. Apparently, the norms which support education as a means of advancement and personal growth are nearly universally accepted by American youth. Educational orientation, at least as measured by educational expectations, is fairly stable, and appears to be predictive of actual attainment.

The cross-tabular analysis shows systematic differences in both expectations and attainment by race and sex, although to a large extent these differences were reduced by the controls used in the multivariate model. With all else controlled, however, significant differences remain between white males and minority males in their success at attaining educational goals, at least among youth who were still in school as of 1979.

The lack of race or sex differences in educational attainment among the out-of-school sample when the multivariate model was applied probably reflects the route by which the youth left school in the first place. Youth who dropped out of school may feel the most pressure to increase their educational levels, either from family or potential employers, or from their own unmet aspirations for the certification provided by the high school degree. Because the population of high school dropouts is disproportionately black and Hispanic, minorities should be more likely than whites to report increased education.

Minorities are more likely than whites to report financial problems or taking a job as reasons for leaving school. This probably reflects the persistent differences in income between ethnic groups, and indicates that even the financial aid programs targeted to minorities have not eliminated money as a barrier to education. This conclusion must be made cautiously, because some of the youth who report that they left to work may have been drawn out of school by the lure of offered employment, rather than forced out by lack of funds.

Sex differences in educational attainment and education become more pronounced at higher levels of schooling. Whereas young women are less likely to drop out of school than are young men, among youth who have actually started college, men have the higher expectations. The tables suggest that two-year programs may be playing an important role for young women, since they seem to be more likely both to expect and attain 14 years of schooling.

Family formation seems to be a major factor in reducing the amount of education young people get. Taking on the responsibility for marriage or for childrearing both takes up time and increases demand for income, both factors working against continued education.

The emphasis on education among young people is shown by the relatively small reduction in the gap between 1982 attainment and expectations measured between 1979 and 1982. Even among the out-of-school sample, most of the youth who had failed to reach their 1979 goal retained their expectations for increasing their education. Some of these youth may yet succeed, as shown by the ten percent of the group initially out of school who were enrolled in 1982. The desire for education seems widespread and persistent among young people.

Appendix Table 4A.1 Means and Standard Deviations of Variables used in Regression Analyses

Variable	High School Students		College Students		Out of School	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Change in educational attainment between 1979 and 1982 interview dates	2.05	.90	1.82	1.05	0.18	0.57
Age, 1979	16.96	0.81	19.60	1.20	19.61	1.45
Parent's education						
High school dropout	0.19	0.39	0.08	0.28	0.31	0.46
High school graduate	--	--	--	--	--	--
College	0.38	0.49	0.59	0.49	0.20	0.40
Lived with both parents at age 14	0.77	0.42	0.85	0.36	0.73	0.44
Number of siblings	3.16	2.12	2.80	1.97	3.76	2.49
Race and sex						
Black male	0.07	0.26	0.04	0.20	0.06	0.24
Hispanic male	0.03	0.17	0.02	0.14	0.03	0.17
White male	--	--	--	--	--	--
Black female	0.07	0.26	0.06	0.24	0.07	0.26
Hispanic female	0.02	0.15	0.02	0.15	0.04	0.19
White female	0.40	0.49	0.41	0.49	0.43	0.49
Sex-role traditionality	10.82	2.76	9.91	2.44	11.28	2.82
Self-esteem	31.19	3.24	32.67	3.13	30.77	3.41
Number of children desired	2.48	1.52	2.50	1.41	2.42	1.37
Sex interactions with[a]:						
Sex-role traditionality	5.88	6.11	5.30	5.47	5.56	6.27
Self-esteem	15.83	15.83	16.63	16.54	14.29	15.56
Number of children desired	1.23	1.63	1.20	1.44	1.10	1.50

Appendix Table 4A.1 Continued

Variable	High School Students		College Students		Out of School	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Educational expectations (high school students)						
Less than 12 years	0.01	0.09	--	--	--	--
12 years	0.37	0.48	--	--	--	--
13-15 years	0.18	0.39	--	--	--	--
16 or more years	--	--	--	--	--	--
(College students)						
13-15 years	--	--	0.13	0.33	--	--
16 years	--	--	0.48	0.50	--	--
17 or more years	--	--	--	--	--	--
(Out of school)						
Less than 12 years	--	--	--	--	0.13	0.34
12 years	--	--	--	--	0.49	0.50
13 or more years	--	--	--	--	--	--
Lived with parents, 1979	0.99	0.12	0.47	0.50	0.58	0.49
Lived with parents, 1982	0.51	0.50	0.32	0.47	0.30	0.46
Married, spouse present, 1979	0.07	0.09	0.02	0.14	0.25	0.43
Married, spouse present, 1982	0.14	0.35	0.20	0.40	0.43	0.49
Ever had a child, 1979	0.02	0.13	0.01	0.12	0.22	0.42
Ever had a child, 1982	0.12	0.32	0.09	0.29	0.41	0.49
Percent of weeks employed between 1979 and 1982 interview dates	--	--	--	--	68.22	33.10
Percent of weeks unemployed between 1979 and 1982 interview dates	--	--	--	--	12.93	19.02

[a] Male equals one for sex interactions.

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CHAPTER 5

LONG TERM OUTCOMES OF GOVERNMENT-SUBSIDIZED EMPLOYMENT AND TRAINING PROGRAMS

JOAN E. CROWLEY

The purpose of this chapter is to provide an overall evaluation of the effects of the government employment and training programs on youth in the United States, using the extensive information on program participation and economic outcomes available from the first four waves of the NLS. The analysis will also explore whether some general types of services were more effective than other services.

Overview of government employment and training programs

Government employment and training programs attempt to provide opportunities for successful participation in the labor force by individuals who for one reason or another have had difficulties in finding and keeping adequate employment. The specific designs of the various programs reflect current assumptions about why some individuals are not successful. Some of the earliest programs were started during the depression in the 1930s, when the problem was seen as simply not enough jobs to go around. The federal government therefore created jobs through such mechanisms as the Civilian Conservation Corps and the Works Projects Administration. These job creation programs have more recently taken the form of Public Service Employment and the Summer Youth Employment Programs of the CETA agencies.

In times of relatively low unemployment, the employment problem has been seen as caused by the lack of appropriate skills of job seekers for available jobs. Programs designed to address the skills problem focus on training individuals, using a variety of mechanisms ranging from classroom training and job counseling through placement in subsidized employment. The goal is to alleviate structural unemployment by providing hard-to-employ individuals with remedial training or experience designed to make the participants more attractive to employers.

From 1972 to 1982, the major government employment and training program was CETA, the Comprehensive Employment and Training Act. CETA was a block grant program, under which local governments were to provide a range of employment-related services, ranging from funding subsidized jobs to classroom training in specific job skills and basic education. In 1982, CETA was superceded by the Jobs Training Partnership Act, which continues many of the training activities developed under CETA and which stresses participation by representatives of the private sector in designing training services. Direct subsidized employment, however, will not be part of the new program.

The other major source of government-subsidized employment and training is the WIN (Work Incentive) program for AFDC recipients. Under WIN, all AFDC recipients deemed able to work are required to register for employment services. Welfare recipients were also a major target group for CETA, and referral to CETA was one component of potential WIN services.

For most of the history of the CETA program, youth were a special concern. Unemployment rates for teenagers of all races are consistently higher than adult unemployment rates, and unemployment rates for black teenagers are running at approximately 50 percent in the early 1980's. Some of this unemployment is short term job-hopping, to be expected while youth explore the labor market before settling down, but there is evidence that long-term youth unemployment can have lasting effects on the ability of young adults to provide for themselves and their families in later life (National Commission for Employment Policy, 1981, p. 48). One goal, then, of government-subsidized employment and training programs is to facilitate the transition to work of youth who are at risk for employment problems. The groups identified as most at risk are those from economically disadvantaged families, who may not have the resources to obtain sufficient education or vocational training on their own; and minority and handicapped youth, who face additional barriers to employment based on discrimination of various types.

The special concern of the Federal government for youth entering the labor market was reflected in the Youth Employment and Demonstration Projects Act of 1977, which established special training and employment programs for individuals age 21 and under. These programs were in addition to the summer youth programs, which had provided subsidized summer employment for thousands of young people annually since the initial CETA authorization in 1972.

Implementation issues

CETA was designed to be administered by local agencies (prime sponsors), which were expected to be able to tailor their programs to meet local conditions while meeting standards set by the U. S. Department of Labor (DOL). The DOL retained accountability for seeing that the services were delivered and the money was spent in keeping with the provisions of the authorizing legislation. Each prime sponsor was responsible for determining which target groups in the local population were most in need of employment and training services, which services were most appropriate for each participant, and which skills were most likely to be in demand in the local labor market. In FY 1978, 450 different prime sponsors had responsibility for delivering services funded under CETA (U. S. Department of Labor, 1979).

As with CETA, the actual delivery of WIN services was decentralized, with special units set up within each area. Since the range of services provided under CETA and WIN were quite similar, in some cases there was close cooperation between agencies in serving welfare recipients. In other cases, the systems operated quite separately.

The decentralization of the service delivery systems meant that nationwide there were wide variations in the quality and variety of services delivered and in the characteristics of program participants. Many evaluations have focused on the effectiveness of specific programs in specific locations (Hahn, 1980). Some prime sponsors have run very good intervention programs, with highly positive outcomes for their participants. Others may have run ineffective programs. For efficient use of federal funds, the intervention must be "operator-robust," that is, capable of being delivered as intended, regardless of the specific persons responsible for its delivery (cf. Chen and Rossi, 1983). The NLS Youth Survey was designed to look at the effects of the federal employment and training effort across all types of participants and all service delivery systems. The question addressed here is whether, across all variations, young people who participated in government employment and training programs are better or worse off than they would have been without the programs.

One of the problems with such an evaluation is determining precisely what has been evaluated. Decentralization allowed a very wide range of discretion to local agencies in administering services. Job counseling, for example, might range from simply a pep talk about going out and searching for a job to a comprehensive evaluation of the individual's aptitudes and interests followed by intensive personal interviewing to determine and overcome barriers to job search or job retention. Some CETA offices provided services themselves; others contracted with local agencies for programs. Although a large scale survey such as the NLS could not be expected to adequately measure the quality of services received, indicators of general types of services received are available.

Data from the four waves of the NLS Youth cohort will be used to explore two major questions. First, how effective are the programs over all, and are they particularly effective (or ineffective) for certain types of participants? Second, are some types of services more associated with positive outcomes to participation than are others? Several possible outcomes will be explored to see how well program participants are doing in terms of employment, income, and education relative to their otherwise comparable peers who did not spend time in these programs.

Evaluation Strategy

The NLS was designed to oversample groups targeted for services--minorities and the economically disadvantaged. As expected, the sample included a substantial number of youth who reported having participated in government employment and training programs. Note that both the participants and non-participants were selected into the NLS by the same sampling procedure. By judicious selection of control variables, it should be possible to establish comparisons between participants and non-participants which will represent program effects, relatively free from selection bias problems usually encountered in non-experimental designs.

By capitalizing on the panel design of the NLS, we avoid some of the worst problems of causal estimation. Characteristics of individuals can be measured both before and after participation. Measuring program participation and outcomes like employment and education for the same time period can be misleading, because the amount of employment or education reported by the participants may actually be services provided by the programs. Restricting the measure of weeks worked to unsubsidized weeks worked is no more satisfactory, because youth leaving subsidized jobs may take a few weeks to find suitable unsubsidized employment, artificially putting themselves at an apparent disadvantage compared to control group youth who did not change employers.

To clarify these ambiguities, calendar year 1981 is established as the outcome year and youth who were enrolled in programs during January of 1981 are excluded from the sample. Some previous participants may re-enroll in programs in 1981, but we know that, as of the beginning of the outcome year, time in the labor force or in school for both our participant group and our non-participants were being accrued without government support.

Comparisons between participants and non-participants are made separately based on participation during each calendar year 1978 through 1980. Calendar years are used because income and earnings are available for calendar year periods. The participant group for each year is defined simply in terms of whether the individual reported having been in a government-subsidized employment and training program at any time during the year, regardless of prior or subsequent participation. Youth who were in programs which overlapped from one year to the next were counted as participants in both years.

The income distribution of participants is truncated because few affluent youth would be selected for programs even if they applied.[1] Since income and associated variables are critical to the analysis, both in terms of determining who would participate in programs and in determining values of the outcome variables, both participant and non-participant groups are limited to those who are at or below the lower living standard level or the poverty level for their family size and their area, or whose families received welfare for the participation year being analyzed.

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[1] Technically, affluent youth could be enrolled in training programs, either through experimental programs designed to assess the impact of different client mixes or by falling into other groups targeted for service, such as high school dropouts or the physically handicapped. In practice, however, the number of such participants was extremely low (Hahn, 1980).

The effects of time are confounded in the analysis of government-subsidized employment and training programs, particularly those funded by CETA, because the programs themselves changed substantially over the period of the evaluation. The 1978 reauthorization act made many new provisions for targeting services toward the very hard to employ. At the same time, the YEDPA programs were being implemented. As expected, during the first year there was a great deal of variation in the degree to which prime sponsors had developed their youth services. By the second year, substantial improvements had been made in the quality of the worksites to which young people were assigned (Hahn, 1980). It is quite possible that differences in effectiveness between 1978 and later years might be due to changes in the programs themselves. To some extent, controls for type of service received may help to control for programmatic changes, but the problem cannot be entirely solved with the available data.

Outcome Variables

Outcomes selected for the evaluation fall into three main groups: indicators of the quality and quantity of employment, indicators of educational attainment, and indicators of welfare dependency. The most detailed measures are available for employment. Indicators of whether the respondent held a subsidized job in the outcome year, annual earnings, hourly rate of pay at the 1982 interview date, and job satisfaction will be used.

One of the explicit goals of youth programs is to encourage young people to stay in school, or to return to school if the youth has dropped out. Thus, school enrollment status and whether the respondent has received a high school diploma or GED are important outcome measures.

Finally, one of the major goals of government employment and training programs is to reduce the number of people dependent on welfare. We will measure the amount of welfare received by participants and their families, and whether or not they were on welfare at any time in 1981.

Models of program effectiveness

The general approach will be to consider that the outcomes are a function of human capital, family socioeconomic background, respondent demographic characteristics, characteristics of the local labor market, and the respondent's current life cycle stage. When these factors are controlled, measures of program participation should represent differences due to the programs, rather than to the factors which lead to program enrollment.

As noted above, by lagging education and employment for one year where possible, we avoid confounding them with program services. Measurement of education is further complicated by the extremely close correlation of age and grade, especially during the high school years. To reduce such multicollinearity yet maintain crucial information on educational attainment, we replace highest grade completed with a series of dummy variables indicating whether the respondent was enrolled in high school, enrolled in college, a high school dropout, or a high school graduate not enrolled in school.

Family background variables include measures of parental education and presence of reading materials in the home as indicators of social class and orientation toward learning. Measures of family structure--number of siblings and whether the respondent at age 14 was living with both natural parents, with the mother only, or in some other arrangement--give some indication of the resources available to the youth. Family poverty status and welfare receipt for the participation year will also be included in the analysis.

Clearly, youth in areas where jobs are scarce are less likely to find employment than youth in areas where jobs are plentiful. At the same time, problems in obtaining employment should make it more likely that youth will turn to government programs for assistance. Region of residence, particularly the distinction between the South and other areas, is also associated with employment patterns for youth (O'Neill, 1983). The models will therefore control for region of the country, whether or not the youth lived in a SMSA, and the local unemployment rate.

Finally, certain characteristics of the respondents should be associated with the outcome variables. Ability and self-concept have been found to be associated with educational attainment (Morgan, et al., 1979; Bohrnstedt and Felson, 1983). Youth who are still living at home with their parents should have less need for earnings than independent youth.

Sex and race effects are expected to permeate the analysis. The differences in occupational distributions between men and women are striking, as are gender differences in the implications for work of life cycle stages. For young men, marriage and parenthood should similarly serve as incentives to seek stable and well paying jobs. For women, although there has been a large increase in the likelihood of both married women and mothers to be working in the paid labor market, marriage and parenthood may serve as alternatives to employment, rather than as incentives. Since so many factors are expected to differ qualitatively in their influence on women relative to their influence on men, the equations will be run separately by sex (cf. Mallar, et al., 1980). Race, too, has pervasive effects on likelihood of employment; however, due to sample size, it is not feasible to show results by race. This shortcoming may not be too serious, because race should not make the qualitative difference in the equations that is associated with gender.

Provided that the differences between the participants and the non-participants have been properly specified, program effects should be measureable. The relative effectiveness of various types of service will be assessed using dummy variables indicating whether the respondent received one of five services: subsidized employment, classroom training for skills, basic education, job counseling, and a residual category of other services.[2]

For 1979 and 1980, employment and educational status for the preceding calendar year are available, and these lagged variables provide an important set of controls for equating participants with non-participants. For 1978, these lagged measures are not available. Rather than leave 1978 out of the analysis altogether, the models for 1979 and 1980 will be run twice, once with and once without the lagged employment and education variables. Because enrollment status is one of the participant characteristics used in the assessment of program effectiveness, the models without lagged variables will be run including enrollment status as of the interview date.

All of the tables present results from OLS regressions. Several of the outcome variables are dichotomous and thus most appropriately analyzed using probit analyses. Both techniques were applied, and the results were substantially similar, so regression results are shown to keep the presentation consistent across the various outcomes.

The tables presented for discussion below will show only the coefficients directly bearing on the question of program effectiveness. The appendix provides tables for the complete models and for means on the variables for each of the calendar year universes.

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[2] Other services generally involve helping participants solve logistical problems which might prevent them from getting or keeping jobs. Examples are transportation, medical care, and child care. The set of explicit probes used to elicit reports of such support services was lengthened after the 1979 interview to include receipt of meals or lodging. The change in interview format led to higher proportions of program participants reporting receipt of support services in the years after 1979.

I. RESULTS

Employment Outcomes for Males

Employment outcomes for men. There were no significant relationships between annual earnings or hourly rate of pay for 1981 and program services for any year (Tables 5.1 and 5.2). However, it does appear that youth who enter subsidized employment in one year are likely to return to subsidized employment the following year (Table 5.3). These results are much weaker when the analysis is done using probit, the only case where there is a substantive difference between probit and OLS regression..

The equations for job satisfaction (Table 5.4) explain very little variance. Only one coefficient out of 25 in Table 20 is significant, a rate below chance.

Employment outcomes for women. As with men, there are no significant relationships between participation in government employment and training programs and subsequent earnings or hourly rate of pay (Tables 5.5 and 5.6). The tendency for subsidized employment to lead to further subsidized employment is smaller than was observed for men, and is not significant with previous weeks worked controlled (Table 5.7) As with the men, the probit results show little or no effect. Job counseling tends to be associated with being in a subsidized job in 1982, at least for youth who received such services within the previous two years.

As with men, the models are not very useful in explaining job satisfaction, although 1980 program services do seem related to job satisfaction (Table 5.8). Women who received basic education are more

Table 5.1 Regression of Earnings on Program Services for Men[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	1138.40 (1.17)	526.44 (0.71)	-60.79 (-0.06)	383.18 (0.61)	-277.99 (-0.33)
Subsidized Employment	-537.96 (-0.76)	214.13 (0.36)	-499.96 (-0.60)	271.82 (0.52)	-1005.40 (-1.34)
Basic Education	927.18 (0.91)	693.71 (0.93)	383.55 (0.36)	854.62 (1.30)	225.36 (0.26)
Job Counseling	144.48 (0.18)	-420.44 (-0.64)	-226.07 (-0.24)	-420.81 (-0.73)	-761.23 (-0.94)
Other Services	-552.87 (-0.64)	-82.94 (-0.12)	188.20 (0.17)	-663.64 (-1.05)	326.04 (0.36)
N	1255	1651	994	1640	1039
Adj. R^2	0.15	0.18	0.19	0.20	0.16
F	8.78	13.56	8.61	16.70	7.63

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.2 Regression of Hourly Rate Pay 1982 on Program Services for Men[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	25.93 (0.59)	-43.37 (-1.06)	-45.98 (-0.90)	9.17 (0.28)	5.10 (0.11)
Subsidized Employment	0.17 (0.01)	11.28 (0.31)	-15.46 (-0.36)	-49.58 (-1.78)	-63.62 (-1.57)
Basic Education	77.75 (1.67)	77.78 (1.94)	66.30 (1.29)	-16.22 (-0.47)	-31.72 (-0.68)
Job Counseling	-50.05 (-1.31)	-40.70 (-1.12)	-26.07 (-0.56)	-0.79 (-0.03)	21.09 (0.47)
Other Services	-26.62 (-0.64)	10.32 (0.24)	27.57 (0.51)	13.19 (0.40)	25.56 (0.51)
N	970	1019	745	1169	767
Adj. R^2	0.10	0.13	0.10	0.12	0.07
F	4.78	6.32	3.88	6.65	3.07

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year and who were employed on interview date, 1982.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.3 Regression of Subsidized Employment (1982) on Program Services for Men[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	0.020 (0.59)	0.023 (0.55)	0.034 (0.80)	0.031 (0.85)	0.109 **(2.92)
Subsidized Employment	0.045 (1.69)	0.104 **(3.03)	0.045 (1.25)	0.262 **(8.44)	0.242 **(7.16)
Basic Education	-0.019 (-0.55)	-0.024 (-0.58)	-0.038 (-0.88)	0.051 (1.33)	0.012 (0.31)
Job Counseling	0.024 (0.82)	0.049 (1.35)	0.065 (1.70)	0.015 (0.44)	-0.053 (-1.44)
Other Services	-0.026 (-0.82)	-0.086 *(-2.14)	-0.026 (-0.58)	-0.125 **(-3.38)	-0.097 *(-2.32)
N	1011	1242	787	1240	821
Adj. R^2	0.03	0.07	0.04	0.13	0.15
F	2.14	4.13	2.14	8.25	5.67

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.4 Regression of Job Satisfaction on Program Services for Men[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	0.271	-0.036	0.036	0.017	0.075
	*(2.02)	(-0.26)	(0.22)	(0.14)	(0.50)
Subsidized Employment	-0.079	-0.134	-0.123	-0.121	-0.220
	(-0.74)	(-1.07)	(-0.89)	(-1.17)	(-1.64)
Basic Education	-0.199	-0.188	-0.282	0.224	0.259
	(-1.40)	(-1.37)	(-1.73)	(1.77)	(1.67)
Job Counseling	0.013	0.193	0.269	-0.098	-0.074
	(0.12)	(1.58)	(1.87)	(-0.88)	(-0.52)
Other Services	0.056	-0.006	-0.073	0.111	0.177
	(0.45)	(-0.04)	(-0.44)	(0.92)	(1.10)
N	1105	1185	872	1358	905
Adj. R^2	0.01	0.02	0.01	0.02	0.02
F	1.54	1.64	1.37	1.94	1.77

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year and who were employed on interview date, 1982.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.5 Regression of Earnings on Program Services for Women[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	153.45	482.89	673.55	804.34	1122.80
	(0.26)	(1.01)	(1.19)	(1.64)	(1.75)
Subsidized Employment	-700.18	553.24	-287.46	243.36	113.33
	(-1.37)	(1.30)	(-0.54)	(0.58)	(0.21)
Basic Education	203.20	-155.39	-27.03	-776.26	-1072.20
	(0.31)	(-0.31)	(-0.05)	(-1.60	(-1.77)
Job Counseling	193.21	-371.04	-873.10	-507.75	-647.45
	(0.35)	(-0.87)	(-1.68)	(-1.15)	(-1.12)
Other Services	-256.28	-603.59	189.75	139.77	221.46
	(-0.41)	(-1.17)	(0.29)	(0.28)	(0.34)
N	1579	1905	1303	1910	1384
Adj. R^2	0.22	0.17	0.23	0.19	0.20
F	16.43	14.79	14.32	17.97	12.23

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.6 Regression of Hourly Rate Pay 1982 on Program Services for Women[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	-2.17 (-0.05)	6.46 (0.15)	15.70 (0.30)	15.40 (0.40)	57.09 (1.37)
Subsidized Employment	-49.33 (-1.49)	-12.34 (-0.32)	-7.04 (-0.15)	-26.46 (-0.78)	-5.63 (-0.16)
Basic Education	43.33 (1.02)	3.36 (0.08)	1.88 (0.04)	-3.86 (-0.10)	-20.69 (-0.52)
Job Counseling	20.06 (0.54)	-22.90 (-0.60)	-35.06 (-0.79)	-19.75 (-0.56)	-11.75 (-0.32)
Other Services	-24.18 (-0.60)	-12.45 (-0.26)	-12.63 (-0.22)	2.50 (0.06)	-23.66 (-0.53)
N	1048	1015	822	1133	845
Adj. R^2	0.12	0.10	0.08	0.08	0.08
F	5.84	4.85	3.41	4.37	3.40

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year and who were employed on interview date, 1982.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.7 Regression of Subsidized Employment (1982) on Program Services for Women[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	0.063	0.070	0.002	-0.052	-0.077
	(1.93)	1.62)	(0.04)	(-1.27)	(-1.91)
Subsidized Employment	0.029	0.100	0.051	0.113	0.009
	(1.05)	**(2.80)	(1.48)	**(3.25)	(0.28)
Basic Education	0.031	-0.011	-0.037	0.039	0.042
	(0.87)	(-0.25)	(-1.02)	(0.96)	(1.09)
Job Counseling	-0.019	0.102	0.105	0.054	0.086
	(-0.62)	**(2.75)	**(3.07)	(1.48)	*(2.47)
Other Services	-0.029	-0.144	-0.071	0.016	0.045
	(-0.87)	**(-3.18)	(-1.65)	(0.36)	(1.06)
N	1081	1187	856	1181	880
Adj. R^2	0.04	0.09	0.03	0.12	0.06
F	2.62	4.83	1.96	6.96	2.73

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.8 Regression of Job Satisfaction on Program Services for Women[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	-0.032	0.265	0.266	-0.003	0.048
	(-0.23)	(1.84)	(1.65)	(-0.02)	(0.29)
Subsidized Employment	0.053	0.139	0.143	0.101	0.136
	(0.47)	(1.06)	(0.99)	(0.84)	(0.97)
Basic Education	-0.050	0.051	0.022	0.219	0.321
	(-0.33)	(0.36)	(0.15)	(1.56)	*(2.01)
Job Counseling	-0.178	-0.163	-0.235	0.033	0.023
	(-1.38)	(-1.27)	(-1.67)	(0.26)	(0.16)
Other Services	0.014	-0.193	-0.080	-0.334	-0.379
	(0.10)	(-1.18)	(-0.44)	*(-2.22)	*(-2.13)
N	1095	1079	870	1207	898
Adj. R^2	0.02	0.01	-0.00	0.02	0.02
F	1.96	1.37	0.86	1.71	1.74

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year and who were employed on interview date, 1982..

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

satisfied with their jobs, while women receiving support services are less satisfied. The effect of basic education could mean that some women receiving this service attained credentials needed for better (if not higher paying) jobs.

Educational outcomes for men. Table 5.9 shows that there is little relationship between services and subsequent school enrollment. In 1980, there is a significant negative association between being in skill training and being enrolled, but this difference became negligible when previous work history and education are taken into account.

While youth in government employment programs do not seem more likely to be in school in 1981, Table 5.10 shows that youth who report basic education are significantly more likely than their counterparts to have received a high school diploma or GED by the 1982 interview date. Apparently, at least some participants find the programs a successful route to this basic educational credential. Subsidized employment in 1978 is also associated with having a high school certificate in 1981, perhaps due to the role of subsidized employment in initiating youth into the employment and training system.

Educational outcomes for women. Program services in 1980 have a systematic association with school enrollment in 1982 Table 5.11). Receiving basic education from a government employment and training program in 1980 is positively associated with subsequent school enrollment. On the other hand, the coefficient for receiving classroom training for specific job skills is negative. Similarly, women receiving basic education in 1980 are more likely than other women to have received a high school diploma or GED by 1982 (Table 5.12).

Welfare outcomes for men. The models do not explain welfare receipt by men particularly well, and there are few significant coefficients for program

Table 5.9 Regression of Enrollment Status (1982) on Program Services for Men[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	-0.019 (-0.32)	0.013 (0.22)	-0.013 (-0.19)	-0.112 (-1.99)	-0.016 (-0.26)
Subsidized Employment	0.009 (0.23)	0.072 (1.45)	0.045 (0.81)	0.076 (1.62)	0.056 (0.10)
Basic Education	-0.047 (-0.75)	-0.035 (-0.55)	-0.109 (-1.49)	-0.053 (-0.90)	-0.018 (-0.28)
Job Counseling	0.026 (0.53)	0.116 *(2.14)	0.014 (0.22)	0.001 (0.03)	-0.065 (-1.10)
Other Services	0.015 (0.28)	-0.191 **(-3.25)	-0.034 (-0.48)	-0.067 (-1.20)	-0.056 (-0.83)
N	1237	1649	986	1631	1037
Adj. R^2	0.12	0.26	0.15	0.25	0.17
F	6.73	20.57	6.75	21.72	7.92

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.10 Regression of Diploma 1982 on Program Services for Men[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	-0.008 (-0.15)	0.007 (0.13)	-0.035 (-0.50)	0.096 *(2.01)	-0.027 (-0.46)
Subsidized Employment	0.099 *(2.32)	0.090 (1.77)	0.058 (1.04)	-0.045 (-1.12)	-0.020 (-0.38)
Basic Education	0.051 (0.84)	0.150 *(2.52)	0.146 *(2.01)	0.070 (1.41)	0.150 *(2.47)
Job Counseling	-0.006 (-0.13)	-0.073 (-1.39)	-0.164 **(-2.62)	-0.012 (-0.28)	-0.050 (-0.89)
Other Services	-0.103 *(-1.99)	-0.081 (-1.35)	0.017 (0.24)	0.000 (0.01)	0.005 (0.08)
N	1238	1364	987	1634	1039
Adj. R^2	0.49	0.46	0.46	0.54	0.52
F	42.27	40.98	29.50	67.29	38.00

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year and who were employed on interview date, 1982.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.11 Regression of Enrollment Status (1982) on Program Services for Women[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	-0.003	0.002	0.014	-0.032	-0.129
	(-0.06)	(0.05)	(0.25)	(-0.57)	*(-2.18)
Subsidized Employment	-0.026	0.032	-0.016	0.083	0.040
	(-0.62)	(0.66)	(-0.30)	(1.74)	(0.81)
Basic Education	-0.007	0.018	-0.022	0.044	0.122
	(-0.14)	(0.31)	(-0.39)	(0.78)	*(2.15)
Job Counseling	-0.051	-0.008	-0.008	-0.080	0.008
	(-1.13)	(-0.17)	(-0.15)	(-1.62)	(0.16)
Other Services	0.051	-0.050	0.071	0.038	0.014
	(1.02)	(-0.87)	(1.12)	(0.66)	(0.23)
N	1557	1889	1289	1888	1367
Adj. R^2	0.14	0.24	0.17	0.24	0.18
F	9.80	21.71	9.99	24.39	11.11

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.12 Regression of Diploma 1982 on Program Services for Women[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	-0.026 (-0.61)	0.083 (1.84)	0.094 (1.86)	0.027 (0.59)	-0.045 (-0.88)
Subsidized Employment	0.027 (0.73)	0.032 (0.75)	0.107 *(2.27)	0.066 (1.66)	0.011 (0.26)
Basic Education	-0.066 (-1.41)	0.031 (0.66)	0.060 (1.19)	0.185 *(4.02)	0.120 *(2.43)
Job Counseling	0.033 (0.81)	-0.050 (-1.19)	-0.095 *(-2.04)	-0.036 (-0.88)	-0.055 (-1.20)
Other Services	0.036 (0.82)	0.025 (0.47)	-0.011 (-0.19)	0.020 (0.42)	0.107 *(2.06)
N	1557	1599	1289	1889	1368
Adj. R^2	0.54	0.54	0.53	0.60	0.61
F	64.00	64.64	48.77	99.33	71.37

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year and who were employed on interview date, 1982.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

services (Tables 5.13 and 5.14). Basic education is negatively related to being on welfare and to the amount of welfare received, but the relationship is only significant for being on welfare among those receiving basic education in 1978. Job counseling and classroom training for specific occupational skills, on the other hand, tend to be positively associated with welfare, but few coefficients meet the standard criteria for significance.

Welfare outcomes for women. Job counseling in 1979 seems to be positively related both to being on welfare and to the amount of welfare received (Tables 5.15 and 5.16). Also women who were in subsidized employment in 1980 tended to receive more welfare money than did other women. The relationship with subsidized employment, however, reverses to the point that subsidized employment in 1978 is significantly related to lower welfare amounts in 1981.

II. SUMMARY AND CONCLUSIONS

In order to condense the results of the preceding mass of data, Table 5.17 lists for each outcome measure the years in which each service had a significant effect. It is clear that the programs had little effect on subsequent employment, either in terms of pay or of job satisfaction. There may be some slight tendency for youth to continue getting subsidized jobs from year to year, but this is not a very robust finding.

Similarly, programs did not seem to reduce the likelihood that a participant would be on welfare in 1981. The amount of welfare received may actually have been increased for some participants. For women, being in subsidized employment in 1980 and receiving job counseling in 1979 were both related to receiving higher amounts of welfare in 1981. It is possible that through coordination of the CETA and welfare service agencies some participants were made more aware of the range of support available and thus were able to increase their level of welfare support.

Table 5.13 Regression of Receiving Welfare on Program Services for Men[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	0.038	0.065	0.031	-0.034	0.067
	(1.00)	(1.71)	(0.65)	(0.87)	(1.44)
Subsidized Employment	-0.029	-0.053	-0.061	0.003	-0.017
	(-1.00)	(-1.61)	(-1.63)	(0.09)	(-0.41)
Basic Education	-0.082	-0.008	0.013	-0.046	-0.045)
	*(-1.99)	(-0.20)	(0.27)	(-1.15)	(-0.94)
Job Counseling	0.109	0.013	0.021	-0.027	-0.023
	**(3.40)	(0.39)	(0.50)	(-0.78)	(-0.52)
Other Services	0.007	0.041	0.043	0.047	0.074
	(0.20)	(1.03)	(0.93)	(1.23)	(1.50)
N	1244	1372	991	1636	1040
Adj. R^2	0.11	0.08	0.09	0.06	0.07
F	6.14	5.08	4.24	4.77	3.73

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year and who were employed on interview date, 1982.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.14 Regression of Welfare Amount on Program Services for Men[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	98.67 (1.71)	149.94 **(2.67)	149.13 *(1.97)	87.14 (1.66)	117.85 (1.64)
Subsidized Employment	-8.91 (-0.21)	-31.27 (-0.64)	-28.50 (-0.48)	-26.07 (-0.60)	-27.45 (-0.43)
Basic Education	-52.41 (-0.85)	-32.96 (-0.58)	-81.98 (-1.05)	-54.55 (-1.00)	-77.94 (-1.06)
Job Counseling	46.87 (0.97)	22.18 (0.44)	36.42 (0.54)	-10.50 (-0.22)	-47.71 (-0.70)
Other Services	-18.15 (-0.35)	-0.06 (-0.00)	-0.12 (-0.00)	25.44 (0.50)	76.59 (1.00)
N	1241	1367	988	1631	1036
Adj. R^2	0.04	0.07	0.07	0.07	0.08
F	2.96	4.57	3.61	5.34	3.95

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year and who were employed on interview date, 1982.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.15 Regression of Receiving Welfare on Program Services for Women[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	-0.005 (-0.11)	-0.043 (-0.90)	-0.081 (-1.50)	-0.005 (-0.10)	-0.062 (-1.03)
Subsidized Employment	0.021 (0.51)	-0.065 (-1.44)	-0.051 (-1.01)	0.009 (0.19)	0.021 (0.42)
Basic Education	0.013 (0.25)	-0.025 (-0.52)	0.004 (0.08)	-0.028 (-0.55)	0.028 (0.49)
Job Counseling	0.023 (0.53)	0.081 (1.84)	0.125 *(2.52)	-0.022 (-0.46)	0.009 (0.17)
Other Services	0.000 (-0.01)	0.026 (0.48)	-0.026 (-0.43)	0.036 (0.67)	0.035 (0.58)
N	1570	1613	1301	1901	1377
Adj. R^2	0.37	0.36	0.37	0.33	0.39
F	33.13	32.02	26.81	33.77	30.16

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year and who were employed on interview date, 1982.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

Table 5.16 Regression of Welfare Amount on Program Services for Women[a]

	Participation Year				
	1978	1979		1980	
		A	B[b]	A	B[b]
Skill Training	359.41	314.99	393.55	-232.32	-221.19
	(0.86)	(0.72)	(0.72)	(-0.52)	(-0.36)
Subsidized Employment	-872.61	-388.70	-297.04	832.99	1237.40
	*(-2.42)	(-0.92)	(-0.58)	*(2.17)	*(2.38)
Basic Education	601.17	389.56	499.40	-331.82	-358.36
	(1.32)	(0.86)	(0.92)	(-0.75)	(-0.61)
Job Counseling	276.64	841.16	1134.40	111.20	-10.09
	(0.71)	*(2.08)	*(2.29)	(0.28)	(-0.02)
Other Services	406.80	-528.20	-863.98	-508.51	-592.25
	(0.94)	(-1.04)	(-1.39)	(-1.10)	(-0.94)
N	1569	1609	1298	1897	1373
Adj. R^2	0.11	0.11	0.11	0.12	0.12
F	8.00	8.12	6.53	10.15	7.25

UNIVERSE: Civilians in 1979 with family incomes at or below the lower living standard for the participation year and who were employed on interview date, 1982.

[a] t-values in parentheses.

[b] Model A does not include lagged education and employment measures, which are present in Model B.

* Significant at the .05 level, using a two-tailed test.
** Significant at the .01 level, using a two-tailed test.

In terms of educational attainment, educational services appear to provide a means of reaching at least a high school level, although there is no effect on whether the youths are currently in school. Note that level of educational attainment is a direct, irrevocable consequence of enrollment in classroom educational programs. It appears that CETA can help to provide this entry-level educational certification to youth who might otherwise not have done so.

It is interesting to look at the results another way, focussing on which outcomes are affected by type of service rather than which types of service affect each outcomes--i.e, to look down the columns of table 5.17 rather than looking across the rows. One striking effect is the lack of consistency. In no case does a relationship between outcome and service reach significance for all three program years. Too, there is no consistency in effects by outcome domain--employment, education, or welfare. To some extent, this is to be expected, since the outcomes are not neatly linked themselves. One major reason for leaving school is completion of a degree, so that participants who who have attained a GED or who have remained in high school as a result of the program may be less likely than their non-participant counterparts to continue their education. Similarly, subsidized employment positions are limited as to their allowable wage levels, so that continuing in subsidized work might itself reduce post-program wages.

Given these considerations, a few patterns are suggestive. Subsidized employment may to some extent serve to help youth obtain a high school degree, at least for 1978 males and 1979 females. Basic education is linked with job satisfaction for young women and with not being on welfare for men who participated in 1978. At least for the women, the services reported as job counseling seem to be related to remaining in subsidized employment and in the

Table 5.17 Summary of Significant Relationships between Program Services and Outcomes

	Service[a]				
Outcome Measure	Skill Training	Subsidized Employment	Basic Education	Job Counseling	Other
Results for Women					
Earnings					
Hourly pay					
Subsidized employment	78 80B(-)	79A 80A		79A 79B 80B	79A(-) 79B(-)
Job Satisfaction			80B		80A(-) 80B(-)
Enrollment status	80B(-)		80B		
Diploma		79B	80A 80B	79B(-)	80B
Receiving welfare				79B	
Amount of welfare		78(-) 80A 80B		79A 79B	
Results for Men					
Earnings					
Hourly pay				79A	
Subsidized employment	80B	79A 80A 80B			79A(-) 80A(-) 80B(-)
Job satisfaction	78				
Enrollment status				79A	79A(-)
Diploma	80A	78	79A	79B(-) 79B 80B	78(-)

Table 5.17 (Cont.)

Welfare receipt				78(-)	78
Welfare amount	79A 79B				

[a] Table entries indicate the year and model in which the relationship between the program service and the outcome measure reached at least the .05 level of significance. Negative relationships are indicated by '(-).'

welfare system. For both men and women, job counseling is negatively related to getting a high school or GED diploma.

As might be expected, programs reported for the 1980 calendar year appear more likely than programs reported in earlier years to have a substantial (or at least statistically significant) relationship to 1981 outcomes. Results for longer time periods should be more affected than results for shorter periods by the diversity of events which affect individuals, making the effects of training harder to identify reliably over time. It is also possible that the 1980 programs benefited from experiences gleaned from earlier years. Further analysis controlling on the length of time between the service and the follow-up would help to separate the two effects.

What can be concluded about the effectiveness of government training programs? There are no large effects, perhaps due to the variability of program quality inherent in a decentralized system. While effects on employment are very few, through the basic education services, more participants receive high school diplomas or their equivalent than do comparable youth among the non-participants. This education may provide long term benefits in the labor market.

It is rather disturbing that job counseling should have some apparently negative effects. It could be argued that youth who receive job counseling have more "hard core" problems with employment than other youth, but many factors supposedly measuring such problems are included in the regression models. While selection effects cannot be ruled out, it may also be the case that difficult youth are counseled into remaining in the welfare and subsidized employment programs rather than into achieving economic independence.

Several caveats are in order. First, no attempt has been made to control for the selection of individuals into programs. Those in government training programs may not be representative of the average eligible. Second, by looking at detailed program types, sample sizes may not be sufficiently large to ascertain statistically significant results. Also, no attempt has been made to estimate the effect of being in a government program per se. Third, no analysis has been attempted to see whether programs induce a smoother transition to work in terms of subsequent employment and unemployment experiences.

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CHAPTER 6

THE HIGH SCHOOL DROPOUT IN AN OVEREDUCATED SOCIETY

by

William R. Morgan

I. INTRODUCTION

Over the past fifty years there has been a dramatic historical rise in high school completion by the American public. Since 1940 the proportion of young adults 25-29 who are high school graduates has more than doubled, from 37.8 percent to 85.8 percent in 1980 (National Center for Education Statistics, 1982: 16). Coincident with this increased completion rate has been a substantial reduction in the gap between whites and minorities. Young adult blacks and Hispanics still are 10.1 percentage points behind whites in their high school completion rate (77.1 percent in 1980 compared with 87.2 percent for whites). In 1940, however, they were 29.1 points behind (12.1 percent compared to 41.2 percent).

From a more institutional perspective, these increases in high school graduation reflect a major transformation of American secondary education. Before World War II the comprehensive American high school was geared mainly toward preparing the terminal graduate for useful employment and citizenship. College preparatory instruction was provided only for an elite minority, and the decisios to attend college was still exceptional for most youth. Thus, what was an established mass terminal education program in 1940 has steadily moved towards a mass college preparatory program (Trow, 1961). High school graduation increasingly has value primarily in relation to college entrance, decreasingly as a qualification for employment in a permanent career position.

This shifting curriculum emphasis in secondary education may have been more in response to rising parental ambition than to changing demands from the labor market. Analysts have suggested three ways the American workforce in fact is now overeducated. From a labor market standpoint, the increased supply of college graduates has reduced their competitive advantage in starting salaries (Freeman, 1976), lowering the personal investment value of a college education. From a skills qualification standpoint, Rumberger (1980: 78) estimated that 40 percent of all college-educated workers are overqualified for the jobs they hold. Finally, from a psychological standpoint many well-educated workers have unfulfilled job expectations resulting in increased job dissatisfaction in the workforce (Sheppard and Herrick, 1972; Kalleberg and Sorenson, 1973).

Weighing heavily against these costs of educational expansion are the equity gains of the disadvantaged. Much of the overall increase in educational attainment can be attributed to the minorities and youth from relatively low socioeconomic origins. The percentage of young adult minorities with four years of college has jumped from a negligible 1.6 percent in 1940 to 14.6 percent in 1980, compared with an increase from 6.4 percent to 23.9 percent for whites. Institutionally these gains coincide with the shift from a racially segregated to an increasingly integrated educational system. Any policy interventions designed to reduce or ameliorate the problems of overeducation could be detrimental to these gains. Substantial evidence suggests that the improved educational attainment of minorities has reduced racial inequities in the occupational attainments of young workers, although researchers disagree in interpreting the size of the effect (e.g. Featherman and Hauser, 1976; Smith and Welch, 1977; Darity and Myers, 1980). Unfortunately employment conditions for the substantial numbers of minority and disadvantaged youth who still have not participated in this educational advance are now even worse than before (Ellwood and Wise, 1983). How to draw these remaining youth into the educational mainstream is the central policy issue of this report.

Accordingly, this report focuses on the circumstances and early labor market experiences of America's high school dropouts. Four sections of findings are presented. The first section documents the changes over the first four years of the survey in the educational attainments of the youth cohort, considering in aggregate all 33.5 million noninstitutionalized civilian and military youth who were aged 14-21 on January 1, 1979. Possible age and temporal variation in dropout propensity is examined using a transition probability model of educational progression. The model is then expressed in terms of variation in age-specific dropout prevalence, and three types of dropouts are distinguished according to their age and permanence. The second section disaggregates these age-specific dropout rates in order to examine sex, ethnic, and regional variations. A third section reports the expressed reasons for leaving school by all ever-dropped out youth, by sex. Dropout youth are then compared with other youth on socioeconomic background characteristics, education and training experiences, labor market experience, and current household and labor market activity.

The fourth section assesses the impact of dropping out on the early labor market experiences of these youth. The early labor market value of high school completion is examined separately for males and females, and for whites, blacks, and Hispanics, considering separately its human capital and certification components. Returns to schooling are assessed for annual earnings, employment duration, job status, and wage rates. Possible differential returns from different types of high school completion, ranging from regular diploma to GED certification, and from age-normal to age-delayed graduation dates, are examined in a concluding section on policy options for high school dropouts.

II. THE PREVALENCE AND PERMANENCE OF DROPOUT YOUTH

Table 6.1 categorizes the youth cohort into a four-fold educational status division of current high school enrollees and three levels of high school leavers- 1) dropouts--all nonenrolled youth without a diploma or GED; 2) terminal graduates--all youth with a diploma or GED who have not attended college; and 3) graduates with college--all youth with a diploma or GED who have attended some college. As the cohort has matured over the first four survey years from the initial 1979 age span of 14-21 to the 1982 span of 17-24, the proportion of high school enrollees has dropped steadily from approximately half the cohort (16.2 million) to a little over one-eighth (4.4 million youth). Most of the remaining high school students were seniors in 1982.

While Table 6.1 provides a useful summary of the educational progression of the total cohort, it is relatively useless for charting possible age or temporal variation in dropout propensity. The steady increase of youth in the dropout category from 10.9 in 1979 to 14.2 in 1982 reflects the normal age-correlated increase in all leavers, including both graduates and dropouts.

One simple method of computing an aggregate dropout tendency for this youth cohort is to compute for each year the number of dropouts as a proportion of all high school leavers (Table 6.2). Still, however, the steady annual reduction in the proportion of dropouts from 21.1 percent in 1979 to 16.4 in 1982 is not indicative of any temporal decline in overall dropping out tendencies. A clue as to the underlying explanation is the similar annual decrease in proportion of terminal graduates. Being a dropout or terminal graduate is not necessarily a permanent condition. A certain number of dropouts reenroll and get a diploma, while others become graduates by virtue of passing a GED examination. Of the 25.5 million youth who had graduated by

Table 6.1 Educational Attainment Distribution of All Non-Institutionalized Civilian and Military Youth 14-21 in 1979, for Each Year from 1979 to 1982

		Current Educational Status			
Survey Year (Cohort Age)[a]	High School Enrollee	High School Dropout	Terminal Graduate	Graduate with Coll.	Total (N)[b]
1979 (14-21)	48.4% (16,220)	10.9% (3,650)	18.3% (6,150)	22.4% (7,510)	100.0% (33,530)
1980 (15-22)	36.8 (12,320)	12.1 (4,070)	21.5 (7,220)	29.6 (9,920)	100.0 (33,530)
1981 (16-23)	24.0 (8,030)	13.7 (4,590)	24.2 (8,110)	38.2 (12,800)	100.0 (33,530)
1982 (17-24)	13.2 (4,430)	14.2 (4,770)	27.1 (9,090)	45.5 (15,240)	100.0 (33,530)

[a] Age on January 1 of survey year.

[b] Ns are reported in thousands.

Table 6.2 Proportion of High School Leavers Who Are Dropouts, Terminal Graduates, or College Attenders, from 1979 to 1982.

Survey Year	Dropouts	Terminal Graduates	College Attenders	All Leavers	
				Total	N(Thous.'s)
1979	21.1%	35.5%	43.4%	100.0%	17,310
1980	19.2	34.0	46.8	100.0	21,210
1981	18.0	31.8	50.2	100.0	25,500
1982	16.4	31.2	52.4	100.0	29,100

1982, 6.3 percent (1.5 million) held a GED rather than a diploma. Some of these former dropouts will remain terminal graduates, while others go on to attend college. Thus the declining dropout proportion shown in Table 6.2 primarily reflects the cumulative increase over time in number of exits from the dropout status category; conversely, the relatively high proportion of dropouts relative to all leavers in the early years of the survey occurs because most of these eventual returning dropouts had not yet returned. It may be they first wanted to test the labor market, and as we shall see later, such a test was likely to encourage further educational certification.[1]

A still better method of assessing aggregate dropout prevalence is to compute transition probabilities. An annual transition probability is the likelihood that youth in a given educational status one year will remain or move to another status the next. Computationally they are simply the proportion of all youth in a given status category one year who are in one of the four possible statuses the next year. Table 6.3 presents a full set of these values for the first four years of the survey, including the three annual transitions and the three-year transition from 1979 to 1982.

The first row of values simply demonstrates the overall declining reenrollment probability as the distribution of normal age-grade level matched youth moves from the full set of high school grades 9-12 in 1979 to grade 12 in 1982. Thus high school youth enrolled in 1979 had about a three in four (.75) chance of being enrolled in 1980; 1980 enrollees a two in three (.65)

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[1] Another explanation for this decline would apply if it were the case that the initial 1979 sample contained a disproportionately high number of dropouts, even after application of the sample weights. The gradual decline would then also partly reflect, at least in part, the statistical tendency of a regression toward the mean, or true dropout rate. Negative evidence for this possibility is the fact that the older half of the cohort does not differ from the younger half on key background characteristics, and the ability of the transition probability model presented next to account for this variation.

Table 6.3 Educational Status Transition Probabilities, from 1979 to 1982, for the Youth Cohort

Origin to	Origin/Destination		Transition Years	
Destination Status	79/80	80/81	81/82	79/82
Enrolled to				
E	.746	.647	.545	.269
D	.052	.066	.064	.108
G	.102	.125	.185	.258
C	.100	.162	.207	.365
Dropped Out to				
E	.022	.029	.022	.018
D	.898	.907	.915	.813
G	.010	.009	.010	.019
C	.069	.055	.054	.149
Terminal Grad. to				
G	.914	.931	.943	.787
C	.085	.069	.056	.213

N=33,530,000

Legend: E = high school enrollee; D = high school dropout; G = terminal high school graduate; C = high school graduate with college.

chance in 1981; and those remaining 1981 enrollees a little over one in two (.54) chance. The odds of becoming a graduate in the next year (rows three and four) increase from one in five (.20) for all 1979 enrollees to two in 5 (.39) for 1981 enrollees. These reenrollment and graduation rates demonstrate more precisely the influence of cohort aging and grade advancement, and thus provide a useful baseline for assessing the other transition rates.

The dropout probabilities are relatively constant across the three annual transitions. The probability of an enrollee becoming a dropout in the next year is a little over three in fifty (.06) each year; the probability of a dropout reenrolling the next year is only a little over one in fifty (.02), and of graduating (rows three and four) three in fifty (.06). The 79-82 three year transition rate gives a composite picture of the net impact of competing tendencies. The odds were a little better than four in five (.81) that one of the 3.6 million dropouts in 1979 would still be a dropout by 1982. The odds were about one in ten (.11) that one of the 16.2 million high school enrollees in 1979 would be a dropout by 1982.

After noting this relative permanence of dropouts, however, it is also important to realize that their .20 individual propensity to proceed to further education in fact generates approximately ten percent of the college-attending population.[2] The decision to forego the immediate path to college, assuming it was made more often of necessity than choice, thus makes the condition of high school dropout only a temporary, provisional educational stage for many youth. Such decisions are no doubt facilitated by the structure of contemporary American higher education, with its broad range of entrance requirements and institutional forms and quality. Of the 12.1 percent of 1979 dropouts who achieved a GED by 1982, over 90 percent reported they had attended some college, and for most it was a two-year college. Anecdotal evidence further suggests many of these youth continue a course of higher study at the same institution that prepared them for the GED exam. On the more negative side, failure in the youth labor market is also a key factor in moving dropout youth back to school. An important belief in our society has been that however "dead-end" one's job prospects may be, one's opportunity for further education need not be similar. As long as the investment costs in a tight education market continue to be lower than the investment returns in a loose labor market, the proportion of dropout youth should continue to diminish. Examination of the negative labor market experiences of dropout youth will lend further support to this assertion.

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[2] The net increase from 1979 to 1980 in college attenders was 2.4 million. Only two-thirds (1.6 million) came directly from high school, the remainder being delayed entrants--520,000 youth who the previous year were graduates but not enrolled in school, and 250,000 youth who in the previous year were dropouts. In order to check the possibility that some of this college attendance might be due to respondent misreports, in that they could have considered their GED studies away from high school as equivalent to college, date of GED receipt was compared with reported date of college entrance. Although there was substantial missing data on one or both of these two items, the existing data showed that eight of every nine GED holders who attended college entered after they had received their GED.

Barring problems of sampling error, an even more precise assessment of dropout probability is to examine transition rates each year within school grade levels, as presented in Table 6.4. Two tendencies are apparent. First, youth in grades 9 and 12 are less likely to drop out than those in 10 and 11. Second, youth one or more years behind their normal age-grade are the most likely to drop out. Readers should thus keep in mind the aggregate probabilities reported in Table 6.3 are in fact only averages across these grade levels. For example, the 1981-82 enrollee-to-dropout probability of .064 averages the reduced probability of dropping out for the twelfth graders and the higher rates for the other remaining enrolled youth who are behind their normal grade level.

Table 6.4 Probability of High School Enrollee Becoming a Dropout in Next Year, by Current Grade Level, for All High School Enrollees in 1979, 1980, and 1981

Current Grade Level	Enrollment Year 1979	1980	1981
8	.064	.192	.330
9	.040	.104	.300
10	.066	.067	.103
11	.067	.077	.067
12	.031	.037	.037
Total	.052	.066	.064
N (thousands)	16,220	12,320	8,030

In summary, these transition rates suggest the final proportion of dropouts in the cohort should be no higher than the total 14 percent figure reported in 1982 (Table 6.1). The flow of new dropouts has diminished with cohort aging, while the flow of exiting dropouts has increased. Application of the 1981-82 enrollee-to-dropout transition probability to the relatively small 1982 pool of enrollees (.064 x 4.4 million) and the offsetting dropout-to-graduate probability to the large 1982 pool of dropouts (.06 x 4.8 million) produces an estimated net 30,000 decrease in the total population of dropouts for 1983.

Figure 6.1, a graph of the age-specific dropout prevalence in the cohort as a whole, provides a snap-shot summary of this transition probability analysis. The curve shows over the four years of the survey the proportion of youth in each age category who are dropouts.[3] A relatively constant rate of growth in dropout prevalence occurs during the normal high school ages of 15-18, peaking at age 19, and steadily diminshing and levelling off thereafter.

This curvilinear relationship of age to dropout prevalence is not, as already argued, an age-related change in individual propensity to drop out. It is rather the different mix of inflows to and outflows from the pool of dropouts at each age level. Dropout prevalence in the cohort does not increase after age 19 primarily because the pool of enrollees from which new dropouts flow dries up. Few youth are still enrolled by age 19. The reason dropout prevalence begins to decline after this age point is that youth in most states become eligible for the first time then to take the GED examina-

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[3] Such age-specific averaging across survey years presumes the absence of any period effects, and can be checked by averaging within years. Accordingly, an average dropout rate for each survey year was computed by averaging the 17-22 age-specific dropout rates in each year. Variation of no more than one-half percent was well within the limits of sampling error and failed to show any period tendencies across the four-year time interval. From 1979 to 1982 these dropout rates were 14.5, 14.3, 14.7 and 14.8, respectively.

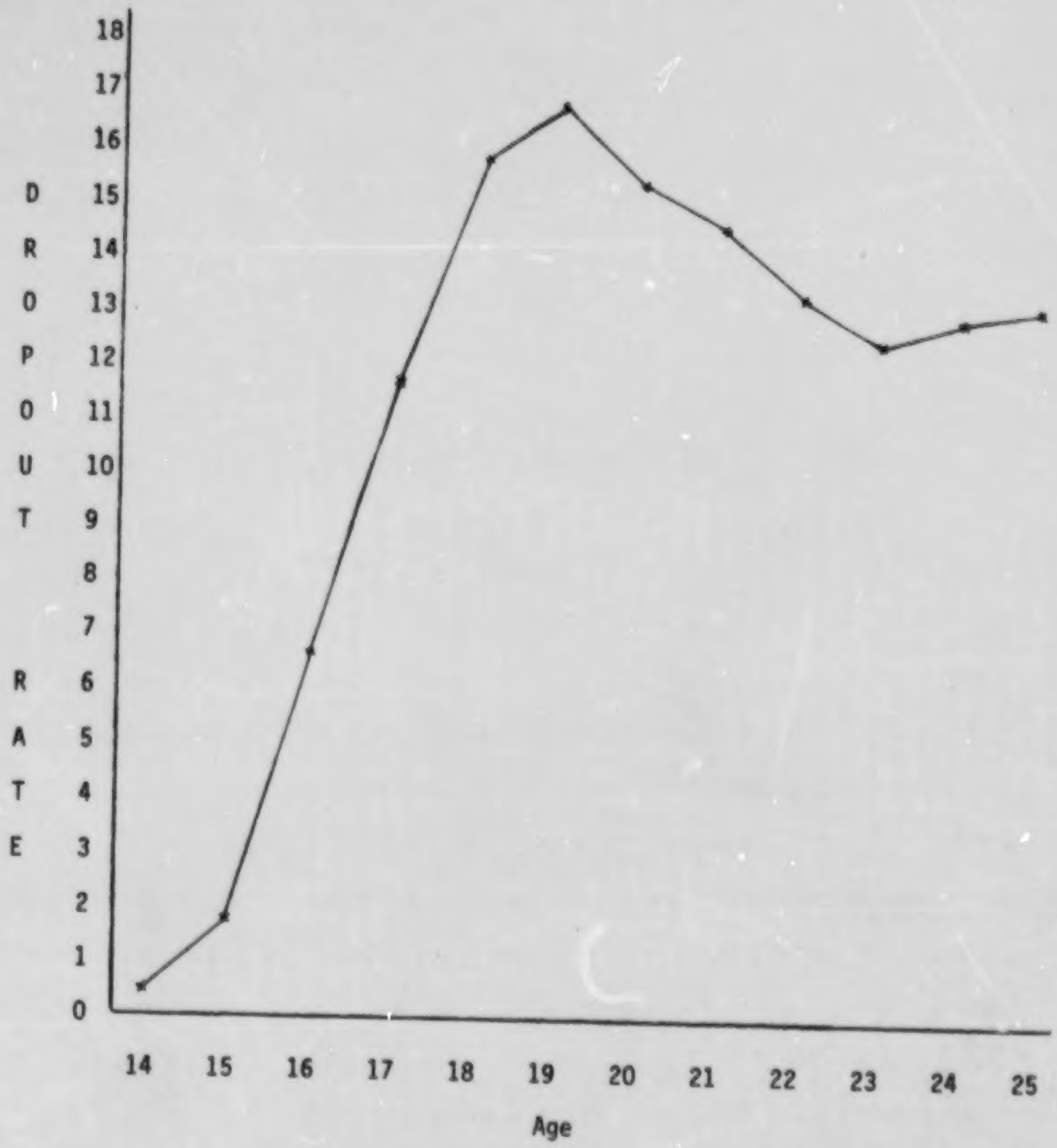

Figure 6.1 Age-Specific Dropout Prevalence in the Youth Cohort, Averaged over 1979-1982 Survey Years (See Table 5A.1 for the prevalence percentages in each year).

tion. School authorities generally are reluctant to permit youth to take the GED as a means of early graduation, and so set a minimum age qualification. These GED-takers steadily lower the pool of dropouts until about age 22, after which the dropout prevalence rate becomes relatively stable.

Besides denoting key benchmarks in dropout prevalence variation, the dropout rates at age 17, 19, and 22 also convey quite different policy implications. For the average American youth, reaching age 17 means one has one last year of high school to complete. Age 19 typically is the first full year out of high school, and 22 is the first year in the adult labor market. The age 17 rate is the proportion of early leavers, youth who could and normally would still be in regular high school. This rate averaged 11.7 percent over the first four years of the survey. It is an upper limit on the proportion of school-age youth for whom incentives for regular school reenrollment might be provided as an alternative to underemployment, delinquency, or premature household activity.

Dropout prevalence among 19 year olds, averaging 16.8 percent, reflects the total proportion of all leavers for whom regular schooling for one reason or another did not work. This proportion includes the nonreturning early leavers plus those youth who simply did not finish. By definition, nonfinishers are dropouts who leave school at or after the time point when their age cohort graduates, as opposed to before. These youth would be the maximum proportion who would be eligible to finish their secondary education by means of some alternative to regular schooling. Presumably most of the nonfinishers would require special or remedial education.

Dropout prevalence at age 22, averaging 13.3 percent, indicates the proportion of new young adults unable to compete with minimum certification standards in the adult labor market. These are the youth who four years after their normal age of high school graduation have not completed sufficient remedial schooling to receive a GED qualification. Dropouts at this age, as opposed to the younger early leavers and the nonfinishers, are more permanent, and are most appropriately characterized as the undereducated. This proportion identifies the pool of young adults whose human capital job qualifications could be immediately assisted by compensatory training opportunities.

In planning such training, one might want to differentiate between those undereducated youth who originally were early leavers and those who were nonfinishers. Table 6.5 shows the distribution of age of first dropping out for all 1982 dropouts aged 20 or older. Approximately half, 52 percent, were early leavers, having first dropped out before age 18. Falling more into the nonfinisher category were the 28 percent who dropped out during age 18 and the 20 percent who first dropped out at age 19 or later.

III. SEX, ETHNIC, AND REGIONAL VARIATIONS IN DROPOUT PREVALENCE

The aggregate statistics presented so far have summarized the overall tendencies in the cohort to move across the four basic educational status categories. Substantial numbers of youth will remain dropouts at least into young adulthood and their early labor market experience. For a significant minority, dropout status represents only a temporary delay in educational progression. Whether youth who terminated or delayed their education did so intentionally or otherwise may not be an answerable question; nor can one be very precise about the factors involved in the decisions of those who return. What can be shown here is the substantial differences in the scope and permanence of dropping out across sex, ethnic and regional groupings of youth. It can hardly be emphasized enough that one current gauge of the success of the American educational system is the extent of its ability to minimize such variation. It is still the basic presupposition for improved equality of access to the labor market.

Table 6.5 Age of First Dropping Out, for All 1982 Dropouts Aged 20 or Older, by Age in 1982.

Dropout age	Age in 1982[a]		
	20-22	23-25	Total
16 or younger	25.4%	24.8%	25.2%
17	29.2	22.8	26.8
18	28.3	27.2	27.9
19	14.6	18.8	16.2
20 or older	2.5	6.4	4.0
Total	100.0%	100.0%	100.0%
n	811	446	1,257
N (thousands)	1,690	1,030	2,720

[a] Age in this table is reported age at spring interview date, not January 1 age.

Figure 6.2 graphs the age-specific dropout prevalences over the span from age 17 to 22, separately for males and females and for Hispanic, black and white youth. Table 6.6 gives the corresponding percentage values in tabular form. As in Figure 6.1, these age-specific rates are averaged over the first four survey years. Possible interactions between sex and ethnicity in prevalence trends are not examined. In general, the overall sex variation in prevalence is substantially smaller than the ethnic variation. The male rate averaged only two points higher than the female rate over the entire age span. This difference primarily reflects the larger proportion of nonfinishers among males. The early leaver rates, as indexed by the age 17 prevalence rates, are nearly identical (.1 percentage point apart) whereas the age 19 rates are 4 points different. Both males and females show a 4-point decline in prevalence over the age span 19 to 22, indicating equal tendencies for delayed completion and GED certification. It thus appears that reducing the higher proportion of male nonfinishers would eliminate the sex difference in dropout prevalence altogether.

The ethnic group variation in dropout prevalence is characterized by two main tendencies. First is the substantial difference in overall magnitude, ranging from a low of 12.9 percent for whites to 19.4 percent for blacks and 32.4 percent for Hispanics. Second is that the curvilinear age trend operates in the manner of Figure 6.1 only for white youth. Instead of peaking at age 19, the dropout prevalence for blacks and Hispanics merely flattens out at this point, showing some slight decline only after age 21.

The proportion of early leavers, as indexed by the age 17 rate is identical for whites and blacks, but 10 points higher for Hispanics. By age 19, when nonfinishers are included in the dropout rates, blacks are 7 points higher than whites and Hispanics are 20 points higher in dropout prevalence. By age 22 the minority differences are three points greater than

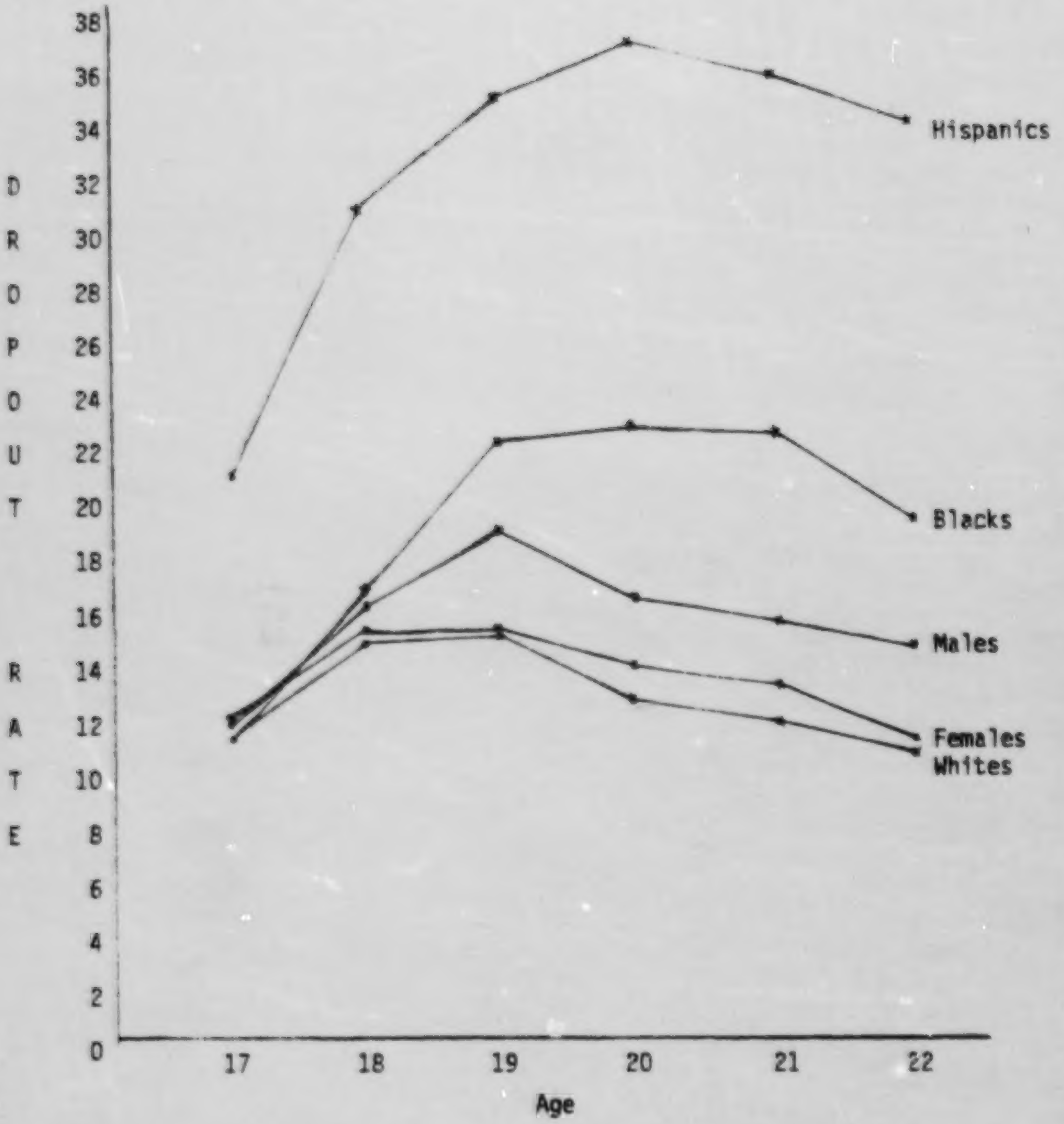

Figure 6.2 Average Age-Specific Dropout Prevalence in the Youth Cohort, by Sex and Ethnicity.

Table 6.6 Age-Specific Dropout Rates by Sex and by Ethnicity, Averaged over 1979-1982.

SEX	17	18	19	20	21	22	17-25
Male	11.9%	16.8%	19.0%	16.6%	15.9%	14.8%	15.8%
Female	12.0	15.6	15.3	14.1	13.6	11.5	13.7
ETHNICITY							
Black	11.4	17.4	22.3	22.7	22.5	19.7	19.4
Hispanic	21.1	31.0	35.6	36.6	36.0	34.1	32.4
White	11.4	15.0	15.1	12.8	12.1	10.9	12.9
TOTAL	12.0	16.2	17.1	15.4	14.8	13.2	14.8

they were at age 19. This difference reflects both the smaller number of GED finishers among minority dropouts and their larger proportions of older enrollees still at risk of becoming new dropouts. The greater magnitude of the dropout problem among black youth is thus not so much attributable to more leaving early compared with whites than it is to more who do not finish. It is a case of more unsuccessful schooling for blacks rather than of more interrupted schooling for them. The extremely high dropout prevalence among Hispanics reflects the double tendency for high rates both of leaving early and of not finishing. In summary, a relatively greater number of male and minority youth experienced failure-induced protracted enrollment followed by eventual quitting. In addition, the flatter decline for minority youth indicates a smaller proportion go on to achieve GED certification. Becoming a dropout is thus not only more prevalent among minority youth, it is also more likely to become a permanent condition of undereducation.

Dropout prevalence also varies considerably across regions. Only regional variation for whites is reported here, owing to sample size limitations for the other groups. In a nutshell, Table 6.7 shows that dropouts are twice as prevalent among southern white youth as among northern white youth. The rate for western youth is intermediate, just above the national average. This high prevalence figure for southern white youth is approximately equal to the national rate for black youth. The age-specific composition of the overall rates however, are quite different. If one focuses on the age 17, early leaver dropouts only, southern whites average 6 percentage points higher than blacks in overall dropout prevalence. Thus compared with blacks, a larger proportion of southern white dropouts consist of youth who have left school early, there being proportionately fewer unsuccessful finishers. But like their minority counterparts, southern white dropouts have a relatively flat age-trend, indicating their dropout status tends to be permanent also.

Table 6.7 1982 Age-Specific Dropout Rates of the Youth Cohort, by Region, Averaged over 1979-1982 for White Youth.

Region	Age							
	17	18	19	20	21	22	17-22 Average	Total Dropouts (Thous.)
New England	7.7%	14.2%	10.6%	11.8%	12.2%	8.6%	10.8%	160
Middle Atlantic	7.1	10.2	10.3	7.4	5.8	6.0	7.8	310
S. Atlantic	18.1	18.5	20.3	18.8	19.1	17.8	18.8	740
E. S. Central	17.1	20.0	20.8	20.0	22.7	25.4	21.0	300
W. S. Central	13.4	16.3	13.0	13.2	13.3	11.3	13.4	220
E. N. Central	8.7	13.7	13.8	11.4	10.8	8.9	11.2	800
W. N. Central	6.0	8.5	10.0	8.4	8.7	10.4	8.7	170
Mountain	15.1	18.6	20.8	13.7	9.9	7.0	14.2	190
Pacific	13.5	18.8	19.7	15.9	13.0	11.7	15.4	380
U. S. Total	11.4	15.0	15.1	12.8	12.1	10.9	12.9	3,270

IV. THE SOCIAL REALITY OF UNDEREDUCATION

The previous two sections have documented the scope and permanence of dropout status among American youth. Interpretations of the apparent trends were made, but no formal explanations could be provided. This section will examine available evidence on the causes of dropping out, from the social psychological perspective of the expressed reasons given by dropout youth for leaving school. This approach takes at face value the reasons youth give. Table 6.8 groups thirteen categories of reasons into the three basic areas of family-related, school-related and work-related reasons and a residual "other reasons" category. The answers were given by all youth who ever dropped out of high school in the survey year they first reported having done so. These represent 17.5 percent of the cohort, or 5.9 million youth. One million (37 percent) of the 2.7 million female dropouts reportedly did so for family reasons, the respondents citing either pregnancy, marriage, or a more anomalous response about home responsibilities. This response was given by only 5 percent of male dropouts, representing 110,000 out of a total of 3.2 million youth. Instead male dropouts most frequently cited school-related reasons, most indicating they simply disliked school, but others stating they had poor grades or low ability, or that they had been expelled or suspended. A total of 51 percent of male dropouts so responded. A substantial proportion of female dropouts, 33 percent, also cited school-related reasons, making it overall a close second to family-related reasons for them. Work-related reasons were cited second most often by male dropouts, 21 percent, whereas for females this was a distant third, being given only slightly more often (9 percent) than the family-related reasons were by male youths.

If one did interpret these responses literally, then the remedy for dropouts as a social malady would be straightforward, albeit simplistic.

Table 6.8 Reason Given for Leaving High School Without Degree, for All Youth Who Ever Dropped Out, in Year First-Reported Having Dropped Out, by Sex[a]

	Female			Male		
Reason Given	79 or before	80-82	Total	79 or before	80-82	Total
A. Family-Related						
Pregnancy	19.1%	11.6%	16.4%	0.0%	.2%	.1%
Marriage	14.3	12.2	13.6	2.2	.1	1.4
Home Responsibilities	6.4	6.9	6.6	4.6	2.1	3.7
Sub-total	39.8	30.3	36.6	6.8	2.4	5.2
B. School-Related						
Disliked School	23.8	24.7	24.1	32.8	23.2	29.2
Low Grades or ability	5.0	3.3	4.4	8.6	9.0	8.8
Expelled or suspended	2.2	1.5	2.0	9.8	10.6	10.1
School too dangerous	1.3	1.4	1.3	6.7	.1	.5
Completed coursework	0.9	1.4	1.1	1.7	3.5	2.2
Sub-total	33.2	32.3	32.9	53.6	46.3	50.8
C. Work-Related						
Chose to work	5.4	7.1	6.1	14.4	13.0	13.9
Financial problem	3.7	1.3	2.8	4.7	5.0	4.8
Entered Military	0.0	.3	.1	2.2	2.9	2.5
Sub-Total	9.1	8.7	9.0	21.3	20.9	21.2
D. Other						
Moved Away	3.4	4.3	3.7	2.8	4.8	3.2
Other	14.4	23.9	17.9	15.4	25.5	19.2
Sub-total	17.8	28.2	21.6	18.2	30.3	22.4
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
N (Thousands)	1,720	990	2,710	1,980	1,190	3,170

[a] Total ever-dropped-out youth is 5,880,000, 17.5% of the cohort.

Remove the family alternative for girls and the employment alternative for boys, and for both improve the satisfaction and meaningfulness of their schooling experience. These are of course only the broadest of policy guidelines, each of which already has been implemented indirectly through detailed programs of social action ranging from pregancy prevention programs to various school-industry cooperative education experiences.

Alternatively, it may be that a direct, literal translation of these self-report statements into policy guidelines is unwarranted. _Post hoc_ motive statements are more properly assessed as social constructions, products of society as much as of individuals. Individual youth base these reasons partly on factual experience, but in good measure also on preferred cultural stereotypes of appropriate accounts (Scott and Lyman, 1968). For both male and female dropouts the single most-cited reason is "disliked school," which is of course an almost universally appropriate response to schooling in the context of American youth culture. Similarly, traditional sex-role definitions make appropriate the second most-cited reasons, pregnancy for girls and choosing to work for boys.

Is the argument then that the real cause of dropping out is cultural traditionality rather than the manifest behavior and attitudes reported by the youth? No. But there may be an important tendency for the act of dropping out to reinforce cultural traditionality, as each generation of dropout youth seeks to justify its low social position with reference to culturally acceptable social patterns. Note that it specifically is the relative deprivation condition of undereducation, not lack of education or ignorance, which is being discussed here. Removing the societal condition of undereducation will reduce teenage pregnancy, the premature need to work, and the distaste for schooling more than vice versa.

The key to understanding the individual behavior of dropping out as a more general societal condition of undereducation is to be aware of its structural rootedness. Like all other advanced industrial societies, American society shows a strong tendency to have the relative educational standing of parents transmitted to their offspring. Tables 6.9 and 6.10 describe the strong relationship, for males and females respectively, between the educational attainments of youth and the education and other socioeconomic characteristics of their parents. Dropout youth have fathers who on average have completed only 9 years of formal education. Terminal graduates have fathers with 11 years, college attenders have fathers with 12 years, and college graduates have fathers with an average of 14 years of education. The means for mother's education level and proportion of fathers and mothers employed in white-collar or blue-collar occupations are ordered linearly across the four educational status categories in the same manner.

Results from more formal causal models of this cross-generational relationship are available elsewhere and so are not duplicated here. See Jencks et al. (1983) and Campbell (1983) for current reviews of this social stratification literature. These models vary in their assumptions regarding the intra-familial social processes by which this intergenerational transmission takes place. Current understanding rests heavily on early conceptualizations of variations in parental encouragement (Kahl, 1953), use of parents as "significant others" for setting one's goals (Haller and Portes, 1973), and taking the family as the primary reference group for projecting one's future position in society (Turner, 1964). With respect to the last explanation, coming from a family where the father has only 9 years of formal education provides a very different perspective on the American opportunity structure than when one's father had 14 years of education.

Such intergenerational causal models are stochastic rather than deterministic, however, meaning that there is some important degree of

Table 6.9 Mean Education, Training, Background, and Location, by 1980 Educational Status, for Male Youth

Enrollment Status (1980)	Non-Enrolled				Enrolled		Total	
Attainment Level (1980)	High School		College					
	Dropout	Grad.	Some	Grad.	H.S.	Coll.	Mean	S.D.
EDUCATION (1980)								
AFQT	49.8	70.7	78.7	91.6	66.9	88.8	70.8	21.9
H.S. Curric.								
Coll. Prep.	.061	.133	.372	.685	.329	.680	.323	.468
Voc., Comm.	.140	.269	.170	.014	.131	.057	.151	.358
General	.636	.576	.440	.301	.529	.245	.492	-
Unclassified	.163	.022	.018	0.0	.011	.018	.034	.182
TRAINING (ever-received, 1980 or before)								
Govt. Prog.	.080	.039	.042	.045	0.0	.013	.025	.156
Other Prog.	.208	.273	.399	.371	.106	.179	.220	.414
Armed Forces	.071	.161	.135	.039	.000	.032	.062	.242
BACKGROUND								
Fa. Educ (yrs.)	9.2	11.3	12.2	13.6	12.1	13.8	11.9	3.6
Mo. Educ. (yrs.)	9.8	11.4	11.8	13.9	11.7	13.0	11.7	2.8
Fa. Emp., W.C.	.103	.215	.390	.619	.306	.569	.319	.466
________, B.C.	.557	.590	.395	.158	.455	.302	.461	.499
Mo. Emp., W.C.	.126	.230	.295	.500	.277	.345	.264	.441
________, B.C.	.335	.241	.176	.068	.240	.114	.222	.416
No. Siblings	4.29	3.40	3.27	2.40	3.16	2.74	3.28	2.31
Ethnicity, Black	.189	.124	.126	.071	.148	.077	.133	.339
_________, Hispanic	.108	.032	.058	.032	.051	0.033	.052	.221
LOCATION (1981)								
Region								
Northeast,	.149	.209	.211	.298	.203	.245	.207	.405
North central	.220	.359	.267	.226	.325	.278	.304	.460
South	.448	.276	.309	.282	.310	.313	.320	.467
West	.183	.156	.213	.194	.162	.164	.169	.375
In SMSA	.674	.702	.805	.852	.727	.805	.738	.440
Area UE rate	7.91	8.55	8.02	7.02	8.29	7.79	8.17	2.79
N (Thousands)[a]	2,060	3,480	1,600	180	6,210	2,850	16,360	

[a] Excludes estimated 30,000 (.2%) unclassified male youth.

Table 6.10 Mean Education, Training, Background and Location, by 1980 Educational Status, for Female Youth

Enrollment Status (1980)	Non-Enrolled				Enrolled		Total	
Attainment Level (1980)	High School		College					
	Dropout	Grad.	Some	Grad.	H.S.	Coll.	Mean	S.D.
EDUCATION (1980)								
AFQT	50.1	69.6	77.2	92.3	68.8	85.1	71.1	19.9
H.S. Curric.								
Coll. Prep.	.068	.138	.371	.696	.311	.567	.305	.460
Voc., Comm.	.086	.299	.184	.089	.134	.104	.164	.370
General	.662	.537	.419	.210	.545	.313	.495	.500
Unclassified	.184	.026	.026	.005	.010	.016	.036	.186
TRAINING (ever-received, 1980 or before)								
Govt. Prog.	.063	.048	.052	0	.002	.032	.030	.170
Other Prog.	.143	.339	.402	.269	.104	.244	.222	.416
Armed Forces	.003	.014	.021	.003	.000	.004	.007	.082
BACKGROUND								
Fa. Educ (yrs.)	9.4	10.7	12.2	14.4	11.9	13.5	11.8	3.6
Mo. Educ. (yrs)	9.3	11.0	12.0	13.1	11.7	12.8	11.5	2.8
Fa. Emp., W.C.	.119	.222	.339	.694	.293	.477	.303	.459
________, B.C.	.519	.555	.438	.214	.436	.340	.450	.498
Mo. Emp., W.C.	.112	.232	.283	.270	.303	.327	.267	.442
________, B.C.	.324	.263	.201	.090	.263	.160	.242	.428
No. Siblings	4.46	3.61	3.31	2.77	3.24	2.93	3.41	2.31
Ethnicity, Black	.162	.116	.145	.040	.148	.130	.138	.344
__________, Hispanic	.124	.040	.045	.028	.056	.034	.055	.228
LOCATION (1981)								
Region								
Northeast	.122	.208	.204	.213	.199	.237	.200	.400
North central	.241	.332	.259	.154	.302	.282	.290	.454
South	.437	.309	.330	.503	.348	.329	.347	.476
West	.200	.151	.207	.130	.151	.152	.163	.369
In SMSA	.715	.689	.796	.835	.745	.817	.750	.433
Area UE rate	8.17	8.29	7.79	7.06	8.12	7.91	8.07	2.67
N (Thousands)[a]	1,820	3,460	1,860	260	5,720	2,870	16,000	

[a] Excludes estimated 20,000 (.1%) unclassified female youth.

probability that one's relative level of educational attainment will exceed one's parents. According to previous research, exceeding parental education comes primarily because of an extra amount of parental encouragement, or better-than-expected academic performance, or both. The solution to undereducation historically in American society has been defined only at this individual level, and that is simply to encourage individuals to acquire more and better education. As long as each individual has a reasonable opportunity to get and use education as a means for intergenerational upward social mobility, i.e., to improve upon the relative social position of one's parents, we have tended to say the system is working. Thus social legislation has been directed toward guaranteeing equal access to a quality education, at least through the secondary level and increasingly to the post-secondary as well. The frontier of controversy over equal access now resides predominantly at the highest and costliest levels of formal education, the professional schools.

Not everyone, of course, endorses this solution. Collins (1979) refers to it pejoratively as the American practice of credential capitalism, which leads to credential inflation and the societal condition of overeducation. There is less policy controversy, however, at the lower end of the education scale. Increasingly a high school education is the minimum qualification for a job of any type, and hence is considered the educational floor upon which each youth should stand. At this level, there is very little quarrel with the argument that guarantees of universal access should be coupled with a strong commitment to universal attainment.

We have seen that there still exists a substantial overrepresentation of dropouts among the black and Hispanic youth in our 17-24 year old cohort. The continuing high proportions of early leavers, nonfinishers, and undereducated youth among them indicates a legitimate, addressable social problem. If one opts to deal with the problem at the level of the individual dropout, this returns us full circle to our reasons for dropping out analysis. For girls recall that this analysis suggested the risk of dropping out could best be lowered first by reducing the immediacy of the family option for them (teenage pregnancy) and second by increasing satisfaction with school. For boys, increasing satisfaction with school was the first priority, reducing the work option was the second. The specific analytic and policy issues surrounding teenage pregnancy and teenage employment are extremely complex and cannot be adequately addressed in this paper. With regard to teenage employment, for example, we still have an unclear understanding of what types and amounts impede successful school performance, and what facilitates performance. D'Amico has presented a detailed analysis of this problem in an earlier chapter of this volume. In the remainder of this chapter we shall instead focus on the school satisfaction option.

Increasing school satisfaction can be addressed at two levels. First is to improve the quality of student life, striving to make the day-to-day experience of schooling more enjoyable. Suggestions on how and how not to do this are presented elsewhere (Epstein, 1979; Morgan, 1983). Second is to increase the meaningfulness of schooling. In a strictly pragmatic sense, youth may need to be better convinced that schooling is worthwhile, that it has some relatively immediate monetary payoff. Aside from quality of student life issues, most youth could probably at least endure school if they believed its completion would bring a sufficient increase in earnings to justify whatever psychic costs the rigors of the classroom may entail. And if there is a reasonable monetary return, how much comes from increased rate of employment and how much from a higher wage rate? While both are important, the higher wage rate may be a more critical incentive for many. The final section of this chapter attempts to provide some current answers to these questions.

V. THE EARLY LABOR MARKET RETURNS TO HIGH SCHOOL COMPLETION

The rationale for this closing analysis rests on the assumption that a primary incentive for dropout-risk youth to complete their high school education is the knowledge that they will be able to use it to advantage in the labor market. It is therefore important to determine to what degree, if at all, high school completers do have more success in the labor market than dropouts. Since dropout-risk youth tend to come from families with a history of undereducation, it is reasonable to assume that imperfect information about the education-employment relationship is in fact more widespread among them.

Alternatively, these results could show that in our overeducated society a terminal high school degree does in fact have little labor market value in iteslf. If this were the case, youth with no college plans might do better to forego the formalities of a high school education and proceed directly to get a headstart in the labor market. A second and perhaps more plausible alternative is that, because of employer discrimination and other aspects of differential opportunity, the labor market value of terminal high school graduation systematically varies across the youth population, tending to be lower for ethnic minorities. If this were the case, then the higher dropout prevalence among them would constitute a realistic response to these differential returns rather than a greater degree of imperfect information among them.

These uniform high returns, uniform low returns, and variable returns hypotheses were analysed looking at the 1981-82 civilian labor market experiences of all youth in the cohort who were high school leavers with no college experience as of 1980. Youth in the military during 1981-82 were excluded. This sample totalled 3,697 respondents, representing approximately 33 percent of the population cohort (see Table 6.1). All analyses were conducted separately for male and female youth. Five measures of labor market activity were each regressed on a basic linear additive OLS-estimation equation which contained a dummy variable for high school completion and 19 other variables hypothesized to be causally related to labor market success. These variables measure six basic domains: quality of secondary schooling (2), job-training experience (3), family background (6), geographic location of labor market activity (3), prior labor market experience (2), and current household activity (3). Tables 6.9-11 present the means across six educational status categories, including dropout and terminal graduates, for each of these variables, separately by sex.

Schooling quality was assessed by the youths' scores on the AFQT test and their high school curriculum enrollment. The AFQT is a 105-point test of verbal and quantitative cognitive skills administered to all (93.6%) youth in the summer of 1980 (Bock and Mislevy, 1981). Even though the test was taken after the youth had terminated their schooling, scores on the test reflect predetermined ability and family background enrichment experiences as well as school achievement. It is a measure of schooling quality in the sense that, in relation to the school completion variable, it measures how much basic learning one has acquired independent of one's certification level. The two, however, tend to covary. Dropouts score one standard deviation (20 points) lower than terminal high school graduates, and two standard deviations (42 points) lower than college graduates. To the extent AFQT measures the cognitive-based human capital gain from schooling, the completion variable net of AFQT then becomes a measure of the certification value of finishing high school.[4]

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[4] The strictly exogenous interpretation of AFQT in relation to schooling would be that it measures the cognitive ability necessary for academic success. It would thus be a measure of the fixed rather than malleable component of human

Table 6.11 Mean Household and Labor Market Activity, by 1980 Educational Status, for Civilian Male (and Female) Youth 17-24 in 1982.

Enrollment Status	Non-Enrolled				Enrolled			
Attainment Level	High School		College					
	Dropout	Grad.	Some	Grad.	H.S.	Coll.	Total	S.D.
Household Activity (1982)								
Married, spouse-present	.290 (.460)	.330 (.503)	.269 (.452)	.367 (.460)	.027 (.105)	.132 (.154)	.170 (.286)	.376 (.452)
Children	.365 (.691)	.236 (.451)	.195 (.358)	.141 (.182)	.027 (.096)	.044 (.080)	.135 (.269)	.341 (.444)
Health-Impaired	.057 (.125)	.048 (.076)	.053 (.079)	.030 (.028)	.029 (.060)	.022 (.037)	.038 (.069)	.190 (.253)
Labor Market Experience (1981)								
Years out-of-school	3.94 (4.07)	3.47 (3.70)	2.41 (2.62)	1.77 (1.68)	.20 (.19)	.23 (.31)	1.60 1.72)	2.02 (2.13)
Mo.'s. tenure, curr./last job	12.7 (6.5)	19.9 (16.2)	17.8 (15.4)	12.2 (14.4)	9.9 (7.3)	15.3 (12.1)	14.1 (11.1)	18.1 (13.8)
Labor Market Activity (1982)								
Wks. employed	33.7 (16.6)	41.0 (34.3)	42.0 (37.9)	48.2 (44.9)	28.2 (25.5)	33.5 (34.6)	34.1 (29.8)	19.5 (21.2)
Wks. unemployed	9.98 (5.99)	5.64 (3.33)	3.70 (2.78)	2.03 (.77)	5.74 (4.66)	2.64 (2.49)	5.47 (3.86)	10.96 (9.44)
Duncan SEI, curr./last job	19.7 (25.3)	26.7 (37.1)	31.2 (42.6)	58.5 (58.7)	22.6 (32.9)	39.8 (43.7)	27.5 (37.1)	19.0 (19.8)
Wage rate, curr./last job	5.47 (3.97)	6.52 (4.69)	6.85 (5.21)	9.73 (6.21)	4.18 (3.68)	5.88 (4.98)	5.48 (4.44)	3.07 (2.19)
Annual earnings	6,610 (2,050)	9,700 (5,800)	10,280 (6,860)	17,290 (10,700)	3,600 (2,580)	6,290 (5,290)	6,830 (4,480)	7,190 (4,980)

High school curriculum is represented by three dummy variables that measure the mix of academic and applied courses taken by the youth. Based on self-reports, youth were placed into college preparatory, general, vocational/commercial, or unclassified categories, using general as the referent category. Net of AFQT and high school completion, having been in the college preparatory curriculum may have some status enhancement value in the labor market. Armed with more "cultural capital" (Dimaggio, 1981), such youth are better able to convey an image of learnedness to potential employers. Dimaggio (1981: 198) argues that cultural capital is especially important for women, whose "contingent careers" make it more likely that they will be "evaluated and rewarded on the basis of ascriptive and diffuse criteria." Presumably this effect should operate even if one does not use one's college preparation for actual college attendance. For both sexes only 6 percent of dropouts and 13 percent of terminal graduates took the college preparatory curriculum, compared with 69 percent of the college graduates. By contrast, the pragmatic skills gained in the vocational-commercial curriculum might be put to more immediate advantage by males. Fourteen percent of the male and 8 percent of the female dropouts took this curriculum, compared with 27 percent and 30 percent of the male and female terminal graduates, respectively.

Training was assessed by three dichotomous variables indicating whether the youth had ever participated by 1980 or previously, regardless of duration, in three forms of job-training opportunities--government-sponsored programs (CETA, Job Corps, etc.) other nongovernment training programs (technical institutes, beauty schools, company training, etc.) and the military service. These forms represent the major institutional alternatives or

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capital each youth possesses. The high school completion variable in turn would measure both human capital acquisition and certification gains, rather than primarily the latter as argued above. Evidence contrary to this exogenous interpretation is presented elsewhere (Morgan, 1983).

supplements to regular schooling for human capital development in undereducated youth. The training varies, however, in its certification value, and in its particular emphasis on the noncognitive and more specialized vocational aspects of human capital. Sixteen percent of the male terminal gradutes and 7 percent of male dropouts had military experience, compared to under one percent for females. Participation in government training was more uniform, averaging close to 6 percent for males and females in both education categories. The highest levels of participation were in the other training programs. They ranged from 20 percent and 14 percent of male and female dropouts to 35 percent and 34 percent of male and female terminal graduates, respectively. The general expectation was that participation in any of these three forms of training would boost labor market activity. Since no efforts were made to measure the intensity or duration of this participation, however, any finding of training effects that runs contrary to previous research must be considered with the appropriate cautions. In the logic of the present analysis, they were introduced primarily as control variables.

The six background variables include father's and mother's education, each coded in years and also their occupations when the youth were fourteen years old. These measures were operationalized as dummy variables for white-collar or blue-collar positions, using not employed as the referent category. The other two variables were number of siblings and ethnicity, which was dummy-coded as black, Hispanic, or white, with the latter the referent category. Based on the social stratification literature already cited, we expected that background advantage would also augment labor market activity, independent of its primary effect via boosting educational attainment. The three location variables controlled for local variations in labor market demand. They measured the youths' labor market activity according to census regions (Northeast, North Central, South, or West, with the latter the referent category), whether it occurred within a metropolitan area (SMSA), and the unemployment rate of the area, or of the state if residence was outside a metropolitan area.

Two measures of labor market experience were number of years prior to the 1981 interview the youth had been out of school and number of months if any the youth had worked for the same employer. This second measure of job tenure was constructed from youths' reports of the current or last job held in the 1981 interview and in earlier interviews. Both variables were expected to have substantial positive effects on labor market monetary returns. Time in the labor market and job tenure theoretically are negatively related to educational attainment, representing the opportunity costs of continuing one's education. This omission from the equation would thus be expected to bias downwards the direct returns to high school completion. Examination of the means, however, makes questionable whether high school completion has any such opportunity costs. Dropouts average only a half-year longer out of school than terminal graduates (recall that relatively few dropouts are actually early leavers), and dropouts' job tenure is actually lower by six months for males and ten months for females.

The three household activity variables were marital status, a dummy variable coded one if respondent was married in 1982 and living with spouse; children, also dummy-coded to one if respondent had any children in 1982; and if a health problem in 1982 prevented or limited their working for pay. These variables were expected to uniformly lower female labor market activity, and, except for health impairment, to have positive effects for males, corresponding to traditional homemaker-breadwinner sex role behavior.

Before presenting the main results, we distill the nearly 500 mean values in Tables 6.9-11 to suggest three basic points. First, the substantial differences between dropouts and terminal graduates in each of the six domains as well as in labor market outcomes highlight the importance of using a fully-specified equation in order to generate an unbiased estimate of the labor market returns to high school completion. It is crucial that this estimate be net of all these other differences between dropouts and graduates. Second, these mean differences between dropouts and terminal graduates look small when viewed from the perspective of the even larger differences between them and the rest of the youth population. Estimation of the labor market returns to schooling in our restricted population is a purposely selective analysis which should not be construed as an estimate of the returns to education in the full youth population. They provide at best a lower-bound estimate of these returns to higher levels of education. Besides not being of immediate concern here, such returns cannot yet be properly assessed due to the age of the cohort. And third, the substantial similarities between male and female youth in human capital (education, training, and background) contrasts markedly with the strong differences between them in relative amounts allocated to household and labor market activity. These traditional sex-role differences are especially strong among dropout youth. It will thus be of additional interest to analyze whether or not the lower amounts of human capital which young women do invest in the labor market permit the same rate of return as for their male counterparts. This question is separate from the high, low, and variable returns hypotheses already posed. No advance prediction is made, since the previous literature tends to be inconsistent on this issue (cf. Mott, et al., 1983).

Table 6.12 reports the basic earnings equation for male and female youth. Achieving high school graduation by 1980 or before was worth an extra 1500 dollars in 1981 earnings for females and 1600 dollars more for males. Both net values are highly significant, in support of the high returns hypothesis. Their near equivalence across sex indicates that at least at the

Table 6.12 Regression of 1981 Earnings on Basic Model of Human Capital, Labor Market, and Household Determinants, for Civilian Youth 17-24 in 1982 Who Were High School Terminal Graduates or Dropouts by 1980 or Before, by Sex

Explanatory Variable	Females		Males	
	b	(t)	b	(t)
Education				
Graduate	1490*	(7.03)	1630*	(4.22)
AFQT	33.9*	(6.10)	35.5*	(3.80)
H.S. Curr.(Gen.)				
College Prep.	1080*	(3.97)	263	(.500)
Voc., Comm.	115	(.538)	498	(1.28)
Unclass.	25.3	(.076)	-359	(-.581)
Training				
Government	-209	(-.574)	-900	(-1.35)
Other	670*	(3.50)	811*	(2.34)
Armed Forces	-11.7	(-.010)	-1405*	(-2.28)
Background				
Fa. Educ. (yrs.)	30.2	(.902)	134*	(2.13)
Mo. Educ. (yrs.)	-45.8	(-1.14)	34.1	(.421)
Fa. Emp., W.C.	338	(1.27)	2050*	(3.97)
________, B.C.	316	(1.61)	1560*	(4.16)
Mo. Emp., W.C.	-600*	(-2.57)	358	(.841)
________, B.C.	152	(.789)	30.8	(.083)
No. siblings	-37.5	(-1.02)	114	(1.72)
Ethnicity, Black	221	(.758)	-1590*	(-3.00)
__________, Hispanic	294	(.796)	-329	(-.443)
Location				
Region (West)				
Northeast	-730*	(-2.53)	-976	(-1.80)
North Central	-544*	(-2.06)	-1340*	(-2.66)
South	-275	(-1.05)	-518	(-1.02)
In SMSA	675*	(3.38)	676	(1.91)
Area UE	-13.9*	(-3.84)	-19.1*	(-2.98)
Experience				
Out-of-School, Yrs.	72.2	(1.66)	339*	(3.72)
Job Tenure, Mos.	87.2*	(15.5)	97.0*	(11.6)
Household Behavior				
Married	603*	(3.29)	2580*	(6.81)
Children	-2810*	(-14.5)	192	(.495)
Health-Impaired	-1250*	(-4.41)	-3060*	(-4.51)
Constant	2760		706	
R^2	.418		.270	
n	1,897		1,751	

*p < .05

level of high school education and at this early point in the age-earnings profile, females are nearly as able as males to convert their education into earnings, even though they have a lower tendency to do so. Another useful metric for assessing the magnitude of these net earnings returns to education is as a proportion of the average gross earnings difference between terminal graduates and dropouts, this being 3090 dollars and 2750 dollars, respectively, for males and females (Table 6.12). Becoming a graduate thus accounts for 53 percent of the gross earnings difference for males, and 54 percent of the difference for females. High school completion, net of what it does for raising youths' human and cultural capital, and after controlling for all other nonschool differences between dropouts and completers, does substantially boost the earnings of youth. Conversely, carrying the label of high school dropout was a serious handicap, at least in the loose youth labor market of 1981.

The other two schooling variables also showed significant effects on earnings, but in absolute terms they were not as large as the high school completion effect. If dropouts were to increase their human capital, as measured by AFQT, to the same level of terminal graduates' (a 20 point increment), for both males and females the resulting gain in earnings would be only about 700 dollars. The high school curriculum effect varied by sex, in support of the cultural capital hypothesis. For females, taking college preparatory instead of general courses was worth an extra 1100 dollars in earnings, whereas for males such courses in themselves had no additional value. Taking vocational or commercial courses had no additional earnings value for either sex. In summary, completing high school in itself brings substantial immediate earnings returns. And to a lesser degree, the direct gains in human capital and cultural capital which occur from completing high school also bring positive earnings returns.

In general, the other variables included in the basic equation had their hypothesized effects on labor market activity, with few surprises. One mild surprise though was that of the three forms of alternative training measured, only the 'other training' category had consistent positive effects on labor market activity. This finding tends to further magnify the importance of regular high school completion.

Before proceeding to the next analysis, one methodological issue must be considered. These earnings equations have been estimated on an unrestricted sample universe of all youth who were dropouts or terminal graduates by 1980, including 8 males (.05% of the total males) and 352 females (18.6% of the total females) who reported no weeks in the civilian labor force in the 1981-82 interview year and another 178 males (10.2%) and 255 females (13.4%) who had zero earnings in 1981. From the perspective of orthodox economic theory this strategy results in a confounding of supply and demand effects, in that the variables in the equation are operating both on the employees' decision to work and on the value of that work to employers. More recent economic work on job search and reservation wage behavior, however, suggests that in reality supply and demand decision-making are not nearly as independent as orthodox theory assumes. Moreover, in this analysis, such confounding permits a useful estimate of the total value for youth of high school completion, as it operates jointly through supply and demand factors. These factors are then examined more independently next, in the separate employment duration and wage rate equations.

These theoretical preferences notwithstanding, the earnings equations were also estimated in the more conventional manner to check the stability of the estimates. When youth with no weeks in the labor force are excluded, the earnings increment from high school completion becomes 1,601 dollars for males and 1,738 dollars for females. When youth with zero earnings are also excluded, the earnings increment is 1,687 dollars for males and 1,655 dollars for females. Thus, whichever approach one uses, the basic conclusion is the same. For male and female youth the overall earnings return from high school completion was substantial and nearly equivalent for both.

Regressions were estimated next for the separate employment duration and remuneration components of annual earnings. Which component is most affected by high school completion could have a substantial bearing on any policy recommendations. If high school completion raises earnings by facilitating more regular employment, but does not increase the wage rate or status of the job one can command, this could in fact be a disincentive to high school completion. The prospect of steady employment in low-paying, menial jobs may instead encourage activity in nonwork, nonschool domains which can provide more satisfying means of income production. Alternatively, any reasonable increase in the wage rate or status level of jobs that ensues from high school completion ought to increase the desirability of finishing school. This hypothesis is a variation on the economists' substitution effect principle. Instead of a higher wage rate producing more work activity among adults, the suggestion here is that among dropout-risk youth knowledge of a conditionally higher wage rate should increase schooling activity, in order to satisfy the condition of high school completion. It is therefore important to determine whether the earnings gain from high school completion has its origin primarily in an increase in job status and wage rate, in employment duration, or in both.

Tables 6.13-16 present these results.[5] Employment duration (Tables 6.14

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[5] These analyses raise the issue of possible sample selection bias. The position taken was that owing to the relatively small sample attrition from the annual earnings equation to the wage equation (11 percent for males, 32 percent for females), no Heckman correction for selectivity bias was necessary. A partial confirmation of this position is provided by the results

Table 6.13 Regression of 1982 Employment Duration on Basic Model, for Civilian Youth 17-24 in 1982 Who Were Terminal High School Graduates or Dropouts by 1980, Females

Explanatory Variable	Wks. Employed		Wks. Unemployed	
	b	(t)	b	(t)
Education				
Graduate	7.26*	(7.12)	-1.78*	(-2.93)
AFQT	.126*	(4.69)	-.013	(-.838)
H.S. Curr.(Gen.)				
College Prep.	3.11*	(2.37)	-1.39	(-1.76)
Voc., Comm.	.218	(.212)	-.935	(-1.52)
Unclass.	-1.80	(-1.12)	-1.21	(-1.26)
Training				
Government	1.47	(.831)	-.245	(-.231)
Other	1.84*	(1.99)	-.152	(-.274)
Armed Forces	-2.10	(-.366)	.149	(.043)
Background				
Fa. Educ. (yrs.)	.174	(1.07)	-.000	(-.001)
Mo. Educ. (yrs.)	-.075	(-.388)	-.108	(-.933)
Fa. Emp., W.C.	2.31	(1.80)	-.776	(-1.01)
________, B.C.	2.21*	(2.33)	-.146	(-.258)
Mo. Emp., W.C.	-2.10	(-1.86)	.708	(1.05)
________, B.C.	2.85*	(3.06)	-.737	(-1.32)
No. siblings	-.349*	(-1.98)	.075	(.705)
Ethnicity, Black	-1.14	(-.816)	3.21*	(3.83)
________, Hispanic	1.24	(.698)	-.771	(-.724)
Location				
Region (West)				
Northeast	-2.10	(-1.51)	1.24	(1.49)
North Central	-1.81	(-1.42)	1.29	1.69)
South	.078	(.061)	-.383	(-.508)
In SMSA	1.33	(1.38)	-.446	(-.776)
Area UE	-.083*	(-4.76)	.021*	(2.03)
Experience				
Out-of-School, Yrs.	.157	(.747)	-.018	(-.147)
Job Tenure, Mos.	.353*	(12.9)	-.071*	(-4.33)
Household Behavior				
Married	-3.51*	(-3.97)	-1.76*	(-3.33)
Children	-15.4*	(-16.5)	-1.04	(-1.86)
Health-Impaired	-7.55*	(-5.51)	.842	(1.03)
Constant	25.2		7.96	
R^2	.414		.057	
n	1,912		1,912	

*p < .05

Table 6.14 Regression of 1982 Employment Duration on Basic Model, for Civilian Youth 17-24 in 1982 Who Were Terminal High School Graduates or Dropouts by 1980 or Before, Males.

Explanatory Variable	Wks. Employed b	Wks. Employed (t)	Wks. Unemployed b	Wks. Unemployed (t)
Education				
Graduate	3.19*	(3.33)	-1.67*	(-2.33)
AFQT	.123*	(5.28)	-.058*	(-3.31)
H.S. Curr. (Gen.)				
College Prep.	.443	(.337)	-.613	(-.622)
Voc., Comm.	.041	(.042)	-.331	(-.452)
Unclass.	-1.77	(-1.15)	-1.47	(-1.28)
Training				
Government	-5.11*	(-3.04)	2.11	(1.68)
Other	.428	(.049)	-.248	(-.383)
Armed Forces	-2.82	(-1.84)	.773	(.672)
Background				
Fa. Educ. (yrs.)	.010	(.063)	-.101	(-.859)
Mo. Educ. (yrs.)	.104	(.512)	.063	(.416)
Fa. Emp., W.C.	4.26*	(3.33)	-3.68*	(-3.84)
______, B.C.	2.73*	(2.91)	-2.37*	(-3.37)
Mo. Emp., W.C.	.381	(.359)	-.606	(-.761)
______, B.C.	-.304	(-.329)	.282	(.407)
No. siblings	.083	(.503)	-.067	(-.541)
Ethnicity, Black	-3.82*	(-2.90)	1.01	(1.02)
________, Hispanic	.330	(.179)	-1.02	(-.740)
Location				
Region (West)				
Northeast	1.11	(.820)	.436	(.429)
North Central	-.092	(-.073)	3.01*	(3.21)
South	3.75*	(2.97)	-1.29	(-1.36)
In SMSA	.570	(.643)	-2.07*	(-3.12)
Area UE	-.072*	(-4.54)	.040*	(3.36)
Experience				
Out-of-School, Yrs.	.378	(1.67)	.335*	(1.97)
Job Tenure, Mos.	.172*	(8.21)	-.120*	(-7.61)
Household Behavior				
Married	5.00*	(5.26)	-2.22*	(-3.11)
Children	-2.62*	(-2.70)	3.93*	(5.39)
Health-Impaired	-9.68*	(-5.73)	-.345	(-.272)
Constant	25.4		13.1	
R^2	.207		.138	
n	1,785		1,780	

*$p < .05$

Table 6.15 Regression of 1982 Duncan SEI and Wage Rate (Ln) of Current or Last Job on Basic Model, for Civilian Youth 17-24 in 1982 Who Were Terminal High School Graduates or Dropouts by 1980 or Before, Females

Explanatory Variable	Duncan SEI		Ln Wage	
	b	(t)	b	(t)
Education				
Graduate	6.45*	(5.01)	.057	(1.71)
AFQT	.137*	(4.04)	.004*	(4.07)
H.S. Curr.(Gen.)				
College Prep.	.890	(.584)	.067	(1.75)
Voc., Comm.	2.88*	(2.34)	-.030	(-.940)
Unclass.	1.52	(.674)	-.057	(-.989)
Training				
Government	1.19	(.545)	-.097	(-1.75)
Other	3.25*	(2.96)	.086*	(3.07)
Armed Forces	-11.0	(-1.74)	-.309	(-1.68)
Background				
Fa. Educ. (yrs.)	.168	(.803)	.004	(.815)
Mo. Educ. (yrs.)	.307	(1.23)	-.015*	(-2.38)
Fa. Emp., W.C.	3.90*	(2.48)	.077	(1.90)
________, B.C.	2.43*	(2.00)	-.030	(-.976)
Mo. Emp., W.C.	-1.12	(-.822)	-.050	(-1.42)
________, BC.	-3.17*	(-2.78)	-.013	(-.429)
No. siblings	-.417	(-1.71)	-.004	(-.663)
Ethnicity, Black	.172	(.093)	.083	(1.78)
________, Hispanic	4.68*	(2.00)	.019	(.322)
Location				
Region (West)				
Northeast	.953	(.572)	-.109*	(-2.59)
North Central	-3.28*	(-2.11)	-.148*	(-3.78)
South	-.490	(-.314)	-.140*	(-3.56)
In SMSA	1.14	(.935)	.037	(1.19)
Area UE	-.064*	(-2.85)	-.000	(-.500)
Experience				
Out-of-School, Yrs.	-.050	(-.179)	.015*	(2.06)
Job Tenure, Mos.	.068*	(2.11)	.005*	(6.21)
Household Behavior				
Married	-.359	(-.330)	-.087*	(-3.14)
Children	-2.76*	(-2.43)	-.102*	(-3.54)
Health-Impaired	-1.91	(-1.07)	-.117*	(-2.56)
Constant	19.2		5.93	
R^2	.145		140	
n	1,314		1,272	

*$p < .05$

Table 6.16 Regression of 1982 Duncan SEI and Wage Rate (Ln) of Current or Last Job on Basic Model, for Civilian Youth 17-24 in 1982 Who Were Terminal High School Graduates or Dropouts by 1980 or Before, Males.

Explanatory Variable	Duncan SEI		Ln Wage	
	b	(t)	b	(t)
Education				
Graduate	1.28	(1.34)	.113*	(3.84)
AFQT	.170*	(7.23)	.002*	(2.74)
H.S. Curr.(Gen.)				
College Prep.	2.80*	(2.16)	-.051	(-1.29)
Voc., Comm.	1.38	(1.43)	-.015	(-.514)
Unclass.	.937	(.604)	-.012	(-.259)
Training				
Government	.987	(.576)	.034	(.650)
Other	2.91*	(3.43)	-.030	(-1.17)
Armed Forces	1.49	(.97)	-.023	(-.477)
Background				
Fa. Educ. (yrs.)	.140	(.892)	.010*	(2.09)
Mo. Educ. (yrs.)	.018	(.089)	-.008	(-1.28)
Fa. Emp., W.C.	2.37	(1.87)	.111*	(2.87)
______, B.C.	-1.21	(-1.29)	.103*	(3.61)
Mo. Emp., W.C.	1.17	(1.11)	.053	(1.64)
______, B.C.	-3.46*	(-3.78)	.041	(1.49)
No. siblings	-.031	(-.190)	.003	(.695)
Ethnicity, Black	2.49	(1.85)	-.079	(-1.91)
________, Hispanic	1.37	(.750)	-.018	(-.324)
Location				
Region (West)				
Northeast	2.64*	(1.98)	-.090*	(-2.19)
North Central	2.26	(1.83)	-.044	(-1.15)
South	3.84*	(3.08)	-.057	(-1.49)
In SMSA	2.74*	(3.13)	.092*	(3.44)
Area UE	.002	(.148)	-.001*	(-2.28)
Experience				
Out-of-School, Yrs.	.077	(.339)	.011	(1.54)
Job Tenure, Mos.	.041*	(2.00)	.003*	(5.28)
Household Behavior				
Married	2.07*	(2.22)	1.42*	(5.02)
Children	-2.81*	(-2.92)	.030	(1.03)
Health-Impaired	3.95*	(2.30)	-.083	(-1.58)
Constant	4.12		5.93	
R^2	.137		.127	
n	1,612		1,551	

$^*p < .05$

and 6.15) was measured by number of weeks employed in the past year, dating from the 1982 interview point, and number of weeks unemployed. Job status (Tables 6.15 and 6.16) was measured by the Duncan socioeconomic index of the current or last job held, as reported in 1982, and the logged hourly wage rate of that job. The Duncan index measures the future earnings value of the youth's occupation, since the primary determinant of an occupation's Duncan score is the average adult earnings in that occupation. The logged wage rate is of course a measure of the current earnings value of the occupation. Although both present and future earnings value should be more important incentives than present employment duration, the assumption here is that for these youth the ability of completed schooling to increase immediately their earning power is the most important consideration.

The tables reveal an ordered but complex pattern. First, high school completion significantly increased employment duration for both sexes. The effect was larger for females, however, particularly in weeks employed. For them the average increase from completion was 7 weeks, compared to 3 weeks for males. In addition, weeks of unemployment were reduced about two weeks by completion, the reduction being slightly greater for females. Second, high school completion significantly increased the wage rate only of males, the rate of increase being 11 percent. And third, high school completion produced a significant gain on the Duncan index only for females, approximately one-third of a standard deviation. These results thus reveal that the equivalent earnings gain from high school completion comes about in quite different ways. For female youth high school completion facilitates much more regular employment, but in jobs which do not pay better now although they will do so

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of several sensitivity analyses, which show the wage returns estimates to be relatively stable across different universe restrictions (Appendix Table 6A.2).

in the future. For male youth high school completion facilitates slightly more regular employment, and in jobs which do pay better now even though they will not continue to do so in the future.[6]

These different patterns of outcomes for males and females seem to reflect the prevailing differences in labor market opportunities for males and females more than they indicate any differential efficacy of school completion. What this last analysis thus explains is the paradox of how high school completion could in fact produce equivalent earnings returns for males and females in spite of known differences in labor market opportunities. Furthermore, when one additionally considers the decreasing attractiveness of full-time household activity for females, particularly for undereducated females in poor households, the prospect of greater labor force participation may in fact be a more crucial incentive than wage rate for their high school completion. The conclusion of this analysis thus supports the high returns hypothesis, as modified by the sex difference in labor market opportunity.

Tables 6.17 and 6.18 present the variable returns analysis for the disaggregated sample, conducted in order to see whether those ethnic groups with higher dropout prevalence have systematically lower labor market returns to high school completion. In general there is negative support for this hypothesis, but the evidence is at times puzzling. For males the significant wage rate increase from high school completion holds fairly uniformly for all groups, varying from an 11 percent increment for whites, to 12 percent for blacks and 14 percent for Hispanics (Table 6.18). The significant increase in male earnings also occurs for all three groups, although for Hispanics the increment is double that in the other two groups. The fact that higher

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[6] A replication of this analysis for the 1981 labor market activity of these youth produced the same pattern of findings. Results are available upon request.

Table 6.17 Regression of 1981 Earnings, 1982 Weeks Employed and Wage Rate on Basic Model, for Civilian Youth 17-24 in 1982 Who Were Terminal High School Graduates or Dropouts by 1980 or Before, by Ethnicity, Females.[a]

Explanatory Variable	Earnings		Wks. Employed		Ln Wage	
	b	(t)	b	(t)	b	(t)
Blacks						
Grad.	1910*	(4.47)	12.2*	(5.70)	.109	(1.46)
AFQT	13.5	(1.04)	.059	(.91)	.004	(1.84)
Yrs.-out	57.1	(.611)	.054	(.12)	-.004	(-.24)
Mos.-ten	148*	(9.91)	.671*	(8.93)	.005*	(2.49)
R^2	.425		.415		.133	
n	419		424		236	
Hispanics						
Grad	379	(.66)	4.27	(1.49)	.048	(.58)
AFQT	58.7*	(3.84)	.150*	(1.97)	.006*	(2.39)
Yrs.-out	160	(1.75)	.299	(.65)	.004	(.22)
Mos.-ten	123*	(7.49)	.606*	(7.38)	.006*	(2.87)
R^2	.369		.356		.067	
n	278		281		176	
Whites						
Grad	1460*	(5.46)	6.41*	(5.01)	.049	(1.19)
AFQT	36.9*	(5.31)	.136*	(4.09)	.003*	(3.24)
Yrs.-out	59.1	(1.05)	.116	(.426)	.018*	(2.03)
Mos.-ten	77.7*	(11.4)	.299*	(9.10)	.005*	(4.80)
R^2	.425		.414		.152	
n	1200		1207		860	

[a] Coefficients for other variables in Basic Model (Table 6.12) not presented.

$^*p < .05$

Table 6.18 Regression of 1981 Earnings, 1982 Weeks Employed and Wage Rate on Basic Model, for Civilian Youth 17-24 in 1982 Who Were Terminal High School Graduates or Dropouts by 1980 or Before, by Ethnicity, Males.[a]

Explanatory Variable	Earnings		Wks. Employed		Ln Wage	
	b	(t)	b	(t)	b	(t)
Blacks						
Grad.	1470*	(2.53)	6.74*	(3.27)	.120*	(2.16)
AFQT	31.4	(1.82)	.124*	(2.03)	.000	(.02)
Yrs.-out	387*	(2.63)	.818	(1.57)	-.001	(-.04)
Mos.-ten	67.6*	(4.13)	.200*	(3.46)	.003	(1.68)
R^2	.227		.231		.063	
n	417		430		348	
Hispanics						
Grad	3200*	(3.00)	4.59	(1.85)	.139*	(2.30)
AFQT	65.3*	(2.39)	.245*	(3.87)	.003*	(2.11)
Yrs.-out	440*	(2.06)	.427	(.87)	.030*	(2.42)
Mos.-ten	107*	(4.40)	.194*	(3.44)	.002	(1.24)
R^2	.345		.308		.189	
n	249		258		225	
Whites						
Grad	1500*	(2.87)	1.53	(1.25)	.112*	(2.85)
AFQT	102*	(9.52)	.121*	(4.22)	.003*	(2.45)
Yrs.-out	311*	(2.53)	.180	(.62)	.010	(1.08)
Mos.-ten	36.2*	(2.98)	.169*	(6.67)	.004*	(4.66)
R^2	.237		.171		.115	
n	1085		1097		978	

[a] Coefficients for other variables in Basic Model (Table 6.12) not presented.

*$p < .05$

dropout prevalence occurs for male Hispanics despite the higher returns to schooling for them is strong evidence against the variable returns hypothesis. Similarly, for male youth the employment duration returns to high school completion are significant only for blacks, also contrary to the prediction of this hypothesis. The pattern of returns for females (Table 6.17) further gives negative support, although in a manner different than for males. The wage rate returns are nonsignificant for all three female groups. Employment duration and earnings returns are highly significant for black as well as white females, and are nonsignificant only for Hispanic females.

These results do not support the variable returns hypothesis. High returns to schooling are not any less likely to occur in minority ethnic groups with high dropout prevalence. If anything, high returns in such groups tend to be more likely. Given the greater obstacles to high school completion among minority youth, it may be that high school completion in fact has added certification value for them. The unanticipated finding from the variable returns analysis was the differing pattern of returns for Hispanic males and females. For males Hispanics tended to draw the highest returns from schooling, whereas for females Hispanics had the lowest returns. If one assumes the household-labor market division of labor follows traditional wife-husband roles more among Hispanics than the other two groups, these findings suggest the young female Hispanic may use any additional human capital she acquires from high school completion to help her husband increase his earnings rather than her own. Adopting a family unit rather than individual worker perspective, the schooling returns for Hispanics then become similar to those for the other two groups.

VI. SOME DROPOUT POLICY OPTIONS

With the exceptions noted, these last findings confirm that dropout youth currently start off substantially worse in the labor market than those who complete high school. While there are important human capital and household activity differences between dropouts and completers, it is the certification value of completion itself that is of paramount importance for explaining their labor market advantage. Furthermore, regardless of whether it represents arbitrary credentialism or valid signaling to employers of one's future productivity, such certification benefits black and Hispanic minority youth at least as much as white youth.

These findings suggest three broad alternative policy responses, each of which has its own internal logic. The most general is the laissez faire approach. From this perspective the American high school dropout is but one manifestation of a basic structural characteristic of all advanced industrial societies. Those young persons with the least educational certification, society's "undereducated," tend to come from the lowest socioeconomic origins and to make the least successful entry into the labor market. The essence of tha American high school dropout stigma is the message that one is undersocialized for full participation in adult society, particularly in the economic sector. In other industrial societies the stigma of undereducation tends to be associated with much lower levels of formal education. The laissez faire position questions the wisdom or feasibility of efforts to alter this basic structural phenomenon. Efforts should instead be focused on diminishing the stigma (i.e., changing the belief that the dropout is undersocialized) and ameliorating the most negative economic and social consequences of the dropout label. The major difficulty with this approach of course is that it effectively ignores the equity concerns of the ethnic minorities who find themselves disproportionately represented among the undereducated.

The second and more specific policy option is to provide dropout-risk youth greater incentives to complete high school. This recommendation would of course apply more to the approximately 50 percent of dropout youth who are early leavers than to the nonfinisher dropouts. One of the most effective incentives may be the information that high school completion has real labor market value. Particularly among the urban poor, youth who consider college attendance unlikely may see little future benefit from a high school diploma. In fact, for some youth the perceived diminished value of the high school diploma has given the high school dropout label a form of street-culture respectability. In the context of the first, laissez faire approach such youthful beliefs are appropriate, since they diminish the negative psychological consequences of the dropout stigma. From the perspective of rational decision-making, however, youth and society will both benefit from knowing the real economic value of high school completion.

The third policy option is to increase the opportunities for delayed completion of high school. Realistically the most ambitious dropout information program can be expected to have only limited success in reducing dropout prevalence. Dropout decisions only infrequently are conscious products of individual rational choice, particularly for the approximately fifty percent of youth who are in the nonfinisher category. Many dropout youth do already value high school completion, but because of social circumstances are unable to achieve it. Such dropout-risk youth would benefit from being given increased opportunities to complete high school. Two such opportunities are the provision for extended years of schooling followed by the delayed receipt of a regular diploma or the somewhat quicker method of independent or group study leading to alternative GED certification.

Before advocating such options, however, it is of some importance to determine if they currently have the same credential value in the labor market as normal high school completion, i.e., receipt of the diploma by age 18. Accordingly, two revised wage equations were estimated, replacing the high school completion variable first with separate variables for diploma and GED completion, and second with separate variables for completion by age eighteen and at age nineteen or later. For both males and females GED certification brought only half the wage returns of a regular diploma. For males the GED rate of return was nonsignificant at 5.2 percent (t=.94), compared with 12.1 percent return (t=4.03) for a regular diploma. For females the GED returns were still lower, 3.4 percent (t=.64) compared with 6.1 percent (t=1.78) from a regular diploma. Clearly the diploma still has greater certification value to employers. This suggests the possibility either of improving the academic value (both real and perceived) of the GED, or else replacing the GED examination preparation with more standard coursework that leads to a delayed diploma.

Delayed completion in itself appears not to be as uniformly detrimental in the labor market as a GED. For males delayed completion actually raised the wage rate of return, to 15.9 percent (t=3.17) for those who finished at age 19 or later, compared with 10.9 percent (t=3.54) for those finished by age 18. By contrast, female delayed completers did poorly, with a near-zero rate of return of -1.0 percent (t=-.13), compared with a 7.1 percent rate (t=2.08) for the on-time completers. Given all the other human capital and household activity variables controlled for in the wage equation, the most plausible reason why delayed completion hurts female youth but not male is employer sex discrimination. The greater prevalence of delayed completers among male youth (11.8 percent of all male graduates compared with only 4.1 percent of female graduates) raises the further possibility employers see such delay as more normal for males. Nevertheless, assuming this sex difference can be diminished, these results suggest that programs of extended regular schooling resulting in a delayed diploma do bring higher returns than the GED examination route.

For the 4.8 million youth in the cohort who were already dropouts by 1982--fourteen percent of all youth then aged 17-24--this third option appears to offer the most lasting benefit. Extended schooling is particularly beneficial for minority dropouts, who tend to be disproportionately represented in the nonfinisher category. In the context of a social structural understanding of the high school dropout problem, high school completion programs for dropout-risk youth need both to inform youth of the labor market advantages of extended schooling and to provide improved opportunities for delayed completion.

VII. SUMMARY AND CONCLUSIONS

One common observation on American society has grounded all the analyses presented in this chapter--in our overeducated society not to complete high school carries a social stigma, as signified in the label "dropout." Among other negative consequences, this dropout label is likely to decrease the likelihood of successful labor market entry; conversely, high school completion has positive certification value, above and beyond its human capital value. The analyses presented here tend to support this observation and suggest some possible avenues for ameliorating this condition.

Dropouts remain most prevalent among the ethnic minorities. In 1982 fully 32 percent of Hispanic youth and 19 percent of black youth were dropouts, compared with 13 percent of white youth. Among white youth, regional variation in dropout prevalence was substantial, reaching a high of 21 percent in the East South Central states. Sex differences in dropout prevalence were relatively slight, but the overall rate for males is 2 percentage points higher than that of females.

Insights into the dropout process come from examining three types of droputs, classified according to age of leaving school and permanence of their condition. First are the early leavers, consisting of all youth who leave school before the normal graduation age of 18. Only half the dropout youth leave school early. The other half consist of 28 percent who leave at age 18 and 20 percent who leave at age 19 or later, the nonfinishers, youth who leave high school at or after the normal departure age but have not finished. There is an 80 percent probability that early leaver and nonfinisher youth will still be dropouts after four years. All youth who ever dropped out and who by age 22 have not completed high school are likely to remain dropouts permanently; they are thus designated the undereducated because they lack the minimum educational certification sought by most employers.

Examination of age-specific dropout prevalence rates showed the relative mix of early leavers, nonfinishers, and undereducated youth in the whole cohort and within ethnic, sex, and regional groups. Of interest are the high proportions of nonfinishers among black youth and of early leavers among southern white youth. The sex difference in dropout prevalence is due primarily to males' higher nonfinisher rate. Dropout prevalence at age 22 reveals an ethnic divergence even larger than the overall differences. Apparently minority youth either had fewer delayed completion opportunities or took less advantage of those opportunities.

When youth are asked their reasons for dropping out, females most frequently cite family responsibility or pregnancy, then dissatisfaction with school, and third, work-related reasons. Males cite school dissatisfaction and work-related reasons, in that order, with only a small percentage citing family responsibility. More striking are the differences in social origins between dropouts and youth who achieve higher levels of educational attainment. Fathers of dropout youth average only nine years of education, compared with 11 years for fathers of terminal high school graduates and 14 years for fathers of college graduates.

Estimation of 1982 wage and labor supply equations for all youth who in 1980 were either dropouts or terminal high school gradautes showed the strong advantage of high school completion for all youth, regardless of sex or ethnic background. Completion via the GED, achieved by 6.1 percent of all high school graduates, brings only half the wage rate of return of a regular diploma. By contrast, delayed completion in itself showed no disadvantage over on-time completion for males, although it did for females. More emphasis might well be given to regular high school, delayed-completion opportunities--especially for the nonfinisher category of dropouts--and a corollary deemphasis on GED certification for youth.

One final note of caution is in order. In assessing the relationship between high school completion and measures of early labor market experience, nineteen additional explanatory variables are included in the equations. These variables measure the other major factors related to labor market success--quality of schooling, participation in nonschool training experiences, employment experience, labor market location, socioeconomic background, and current household activity. Not surprisingly, in the estimation equations one or more variables in each of the six areas did significantly relate to measured labor market outcomes, suggesting the possibility of policy interpretations for all these relationships, not just for high school completion. In the logic of the present analysis, however, these variables were included mainly as statistical controls, permitting an assessment of the value of high school completion net of other key determinants on which dropouts are likely to be different from completers.

They thus improved the precision of the educational returns estimate. In particular, the inclusion of AFQT scores made plausible the interpretive distinction drawn between the certification value of completion versus its human capital development value.

Nevertheless, if one grants that each of the measured areas does represent an important alternative policy arena for facilitating the labor market entry of educationally disadvantaged youth, limited interpretations may be made. They must be read, however, only as summaries of empirical regularities: the full meaning of the estimated coefficients for these variables must await the use of more refined measures and more adequate model specifications.

One intriguing finding, for example, is the apparent negative effect (Table 6.12) on males' earnings of prior military experience. The effect apparently operates via reducing labor force participation rather than wage rates (Tables 6.14, 6.16). But it is unclear whether this relationship holds across all branches of the service, and for completers as well as attriters and whether recent veterans make use of alternative sources of income instead of immediately joining the labor force. These and other questions must be answered before any policy interpretations can be drawn from Tables 6.12, 6.14, and 6.16. Similarly, for male youth the positive wage and employment duration returns to marriage permit no direct policy interpretations pending further analysis: this relationship could reflect normal life-cycle transition to joing family and work roles, or it could represent preferential treatment by employers. An analysis fully incorporating the longitudinal aspects of the data is necessary to answer this question.

These alternative policy areas do suggest a rough summary assessment of their total net impact on the labor market successes of undereducated youth. In other words, if one wanted to reduce the disparity in labor market success between dropouts and completers, how much could be accomplished by factors other than high school completion? As shown in Table 6A.2, a simple regression of wage rate on high school completion alone indicates that for both male and female youth, high school completers on average earn 18 percent higher wage returns than do dropouts. With the additional nineteen variables entered in the wage equation, the net return from high school completion drops to 11 percent for males and 6 percent for females. The gains from high school completion can account for a substantial part of this overall wage difference between completers and droputs, but not all of it by any means.

APPENDIX

Presented here are three additional pieces of information in support of specific features of the data analysis.

1. Throughout this report the descriptive tables have reported the estimated population values for the various youth enrollment and dropout measures instead of actual sample sizes. The latter are given only when necessary to compute degrees of freedom for statistical tests. Before following this procedure, it was determined that the reported population estimates did in fact match comparable Census figures produced from its 1981 annual special October survey. Young (1982) reported 3.05 million civilian noninstitutional youth in the 16-24 age category graduated from high school in 1981. The comparable 1981 NLS figure is a 3.4 million increment over 1980 of civilian and military youth who finished their high school education with a diploma or GED (Table 1). At that time the cohort age range was 16-23. Subtracting out the GED completers and the military population graduates would bring the NLS total very close to the Census figure. Similarly, the 714,000 new dropouts among the civilian youth 16-24 in 1981 which Young reported compares closely with the 810,000 new dropouts estimated from the 1981 NLS civilian and military youth survey (Table 3). However, if one subtracts the 120,000 prior dropouts who reenrolled that year, and the 260,000 more who completed their high school education that year, one gets a NLS-estimated net dropout increment in 1981 of only 450,000.

2. Table 6A.1 gives the year-by-year dropout prevalence figures used in the construction of the age-specific rates for Figure 6.1.

3. Table 6A.2 reports a sensitivity analysis designed to assess the stability of the estimated wage rate of returns to high school completion under different universe restrictions and model specifications. The general result

Table 6A.1 Educational Attainments from 1979 to 1982 of the Youth Cohort, by Age.

1979 Educational Attainment	(Age in 1979)									
	14	15	16	17	18	19	20	21	22	Total
E	99.4%	97.9%	92.8%	86.0%	34.2%	4.2%	1.2%	.1%	0%	48.4%
D	0.6	2.1	6.9	10.5	17.3	17.3	13.6	15.1	13.5	10.9
G	0	0	.3	2.6	21.2	36.8	36.8	38.6	35.3	18.3
C	0	0	0	0.9	27.3	41.7	48.5	46.2	51.3	22.4
	100	100	100	100	100	100	100	100	100	100

1980 Educational Attainment	(Age in 1980)									
	15	16	17	18	19	20	21	22	23	Total
E	98.5	93.2	84.1	37.3	4.8	0.7	0.5	0	0	36.8
D	1.5	6.6	12.3	13.7	17.6	16.2	12.5	13.7	12.9	12.1
G	0	0.1	2.2	21.8	33.4	35.3	34.3	36.5	33.0	21.5
C	0	0.1	1.4	27.1	44.2	47.7	52.6	49.8	54.1	29.6
	100	100	100	100	100	100	100	100	100	100

1981 Educational Attainment	(Age in 1981)									
	16	17	18	19	20	21	22	23	24	Total
E	93.5	84.0	33.2	3.3	1.2	0.1	0.3	0.2	0	24.0
D	6.4	12.5	16.6	15.4	16.7	15.5	11.5	13.1	13.2	13.7
G	0	1.6	20.9	32.5	31.8	32.3	31.8	34.4	31.4	24.2
C	0	1.9	29.3	48.7	50.4	52.0	56.5	52.3	55.4	38.2
	100	100	100	100	100	100	100	100	100	100

1982 Educational Attainment	(Age in 1982)									
	17	18	19	20	21	22	23	24	25	Total
E	84.1	38.3	4.1	0.7	0.3	0.1	0.2	0.7	0	13.2
D	11.5	15.7	17.1	14.9	15.4	14.4	11.5	12.8	13.2	14.2
G	2.6	18.1	33.7	30.7	30.8	31.1	30.2	32.3	30.1	27.1
C	1.8	27.9	45.1	53.8	53.5	54.3	58.1	54.2	56.6	45.5
	100	100	100	100	100	100	100	100	100	100

Legend: E = high school enrollee; D = high school dropout; G = terminal high school graduate; C = high school with some college

Table 6A.2 Alternative Estimates of Rates of Return (Ln Wage) to High School Completion Under Different Universe Restrictions and Model Specifications, by Sex

Universe and Specification Description	Females b	Females (t)	Males b	Males (t)
I. More restrictive universe specification unchanged: youth who were high school terminal graduates or drop-outs by 1980, who had no col-plans in 1979; basic model (Table 12) specification	.051	(1.32)	.102*	(2.92)
R^2	.142		.134	
n	856		1,093	
II. Less restrictive universe, specification revised: all youth not enrolled in school by 1980, including college youth; basic model specification plus two dummy variables for educational statuses of some college and college graduate	.060	(1.81)	.116*	(4.03)
R^2	.132		.143	
n	1,822		1,973	
III. Same universe four specifications:				
A. No other variables in equation	.176*	(5.91)	.182*	(7.31)
R^2	.026		.033	
B. Net of AFQT only	.119*	(3.73)	.109*	(3.89)
R^2	.041		.051	
C. Net of years out-of-school only	.180*	(6.05)	.199*	(7.98)
R^2	.029		.046	
D. Net of years out-of-school and months job tenure only	.130*	(4.31)	.167*	(6.61)
R^2	.060		.067	
E. Net of AFQT, years out-of school, and months job tenure	.078*	(2.41)	.105*	(3.72)
R^2	.074		.083	
F. Net of all variables in basic model (same as estimate in Table 12)	.057*	(1.71)	.113*	(3.84)
R^2	.140		.127	
n	1,272		1,551	

[a] Coefficients for status of some college are .119 (females) and .178 (males); for college graduate are .044 (females) and .788 (males).

*$p < .05$

was that varying the universe restrictions did not alter the estimate, whereas reducing the control variables included in the equation substantially increased the estimated rate of return. The conclusion drawn was that the 20 variable reduced-form equation used in the text provides an adequate if somewhat conservative estimate of this rate of return.

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The Center has also been active in manpower planning both in the U.S. and in the developing countries. A project for the Ohio Advisory Council for Vocational Education identified the highly fragmented institutions and agencies which supply vocational and technical training in Ohio. Subsequent projects for the Ohio Occupational Information Coordinating Committee have followed graduates of these programs. These data and information on occupational distributions of employers collected for the Occupational Employment Statistics Program are being integrated into a comprehensive planning model which will be accessible to trainees and employers and linked to a national network.

Another focus of the Center's research is industrial relations and collective bargaining. In a project for the U.S. Department of Labor, staff members are working with unions and management in a variety of industries to evaluate several current experiments for expedited grievance procedures. The procedural adequacies, safeguards for due process, and cost and timing of the new procedure are being weighed against traditional arbitration techniques.

Senior staff also serve as consultants to many boards and commissions at the national and state level. Recently the Center's staff have produced papers and prepared testimony for the Department of Labor, the Vice President's Task Force on Youth Unemployment, the Joint Economic Committee of Congress, the National Commission for Employment and Unemployment Statistics, the National Commission for Employment Policy, the White House Conference on the Family, the Ohio Department of Corrections, the Ohio Board of Regents, the Ohio Governor's Task Force on Health, and the Ohio Governor's Task Force on Welfare.

The Center maintains a working library of approximately 10,000 titles, including a wide range of reference works and current periodicals, as well as an extensive microfilm and microfiche collection. Through their facilities linked to the University computer, the Center's data processing staff provide statistical, technical, and programming support both for in-house researchers and the over 250 users of the National Longitudinal Surveys data tapes. They maintain the NLS tapes, data base, documentation, and associated software.

For information on specific Center activities, write: Director, Center for Human Resource Research, 5701 North High Street, Worthington, Ohio 43085.

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Center for Human Resource Research

The Center for Human Resource Research is a policy-oriented multidisciplinary research organization affiliated with The Ohio State University. Established in 1965, the Center is concerned with a wide range of contemporary problems related to developing and conserving human resources. Its more than thirty senior staff members come from disciplines including economics, education, English, health sciences, industrial relations, management science, psychology, public administration, social work, and sociology. This multidisciplinary team is supported by approximately 70 graduate research associates, full-time research assistants, computer programmers, and other personnel.

The Center has become preeminent in the fields of labor market research and manpower planning. With continuing support from the United States Department of Labor, the Center has been responsible since 1965 for the National Longitudinal Surveys of Labor Market Experience. Staff have assisted in population and human resource planning throughout the world, having conducted major studies in Bolivia, Ecuador, Kenya, Sierra Leone, Venezuela, and Zaire. At the request of the National Science Foundation, a review of the state of the art in human resource planning was conducted. Other studies have assessed the impact of labor and education policy on labor supply and evaluated employment statistics collection methods. Senior personnel are also engaged in several other areas of research—collective bargaining and labor relations, evaluation and monitoring of the operation of government employment and training programs, and the projection of health education and facility needs.

The Center for Human Resource Research has received over two million dollars annually from government agencies and private foundations to support its research in recent years. Providing support have been the U.S. Departments of Labor, State, Defense, Education, Health and Human Services; Ohio's Health and Education Departments and Bureau of Employment Services; the Ohio cities of Columbus and Springfield; the Ohio AFL-CIO; the George Gund Foundation; the Rockefeller Foundation; and the Ford Foundation. The breadth of the Center's research interests is best illustrated by a brief review of a few of its current projects.

The Center's largest project is the National Longitudinal Surveys of Labor Market Experience. This project has involved repeated interviews over a fifteen-year period with four groups of the United States population: older men, middle-aged women, and young men and women. The data are collected for 20,000 individuals by the U.S. Bureau of the Census, and the center is responsible for data analysis. Since 1979, the NLS has followed an additional cohort of 13,000 young men and women between the ages of 14 and 21. This cohort includes for the first time those serving in the armed forces at the time of the initial interview. In addition to being the definitive U.S. national data set on the labor market activities of young adults, this continuing survey includes unique batteries of questions on such socially important issues as delinquency, alcohol and drug use, fertility, and prenatal care. For this cohort, field work is handled by the National Opinion Research Center. To date the Center's staff have prepared dozens of research monographs, special reports, and books on the NLS, and they also prepare and distribute data tapes for public use.

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(Continued on inside back cover)

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